2017
VIRGINIA STATE RAIL PLAN
Executive Summary

DRPT
Virginia Department of Rail and Public Transportation

VIRGINIA
STATEWIDE RAIL PLAN

Virginia's rail network is a valuable asset that grows the economy, relieves congestion, saves lives, improves air quality and saves taxpayer money. Continued investment in rail infrastructure will ensure the mission and vision of the Commonwealth's transportation network is achieved.

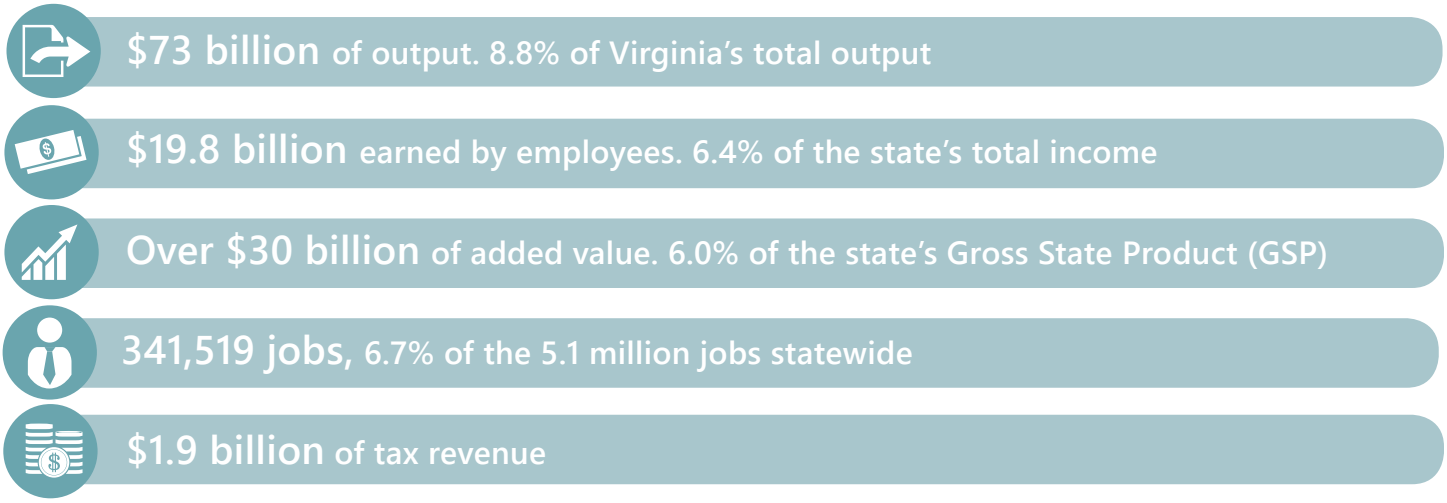
CONTENTS

BENEFITS OF RAIL IN VIRGINIA

VIRGINIA'S RAIL SYSTEMS

Virginia's rail network is a valuable asset for the Commonwealth. It provides an efficient means of moving freight and passengers both within and through the state. The Commonwealth recognizes the privately owned rail network as part of a multimodal system with public benefits and growing economic impacts. Since the 2000s, significant state investments have leveraged private and federal funds to improve freight and passenger rail transportation and support the overall transportation system.

Rail economic impacts to Virginia are estimated using multipliers from the IMPLAN® economic model with input data and assumptions from freight movement data, passenger rail operations, and visitor characteristics. Impacts of rail service-related spending in Virginia emanate from firms providing freight and passenger transport services, industries using such services to trade goods (shippers/receivers), and expenditures from visitors who reach Virginia via rail. Of these activities, freight-users generate the most significant impact.



Output – In terms of total revenue, the rail industry generated about $72.9 billion in output, which is 8.8 percent of Virginia's total output.

Income – $19.8 billion earned by these total employees represent 6.4 percent of Virginia's total labor income. Labor income includes employee compensation and proprietary income. Employee compensation, in turn, consists of wage and salary payments as well as benefits (health, retirement, etc.) and employer paid payroll taxes (employer side of social security, unemployment taxes, etc.). Proprietary income consists of payments received by self-employed individuals and unincorporated business owners.

Value Added – The combined value added impact of rail services is over $30 billion and represents 6.0 percent of the state's Gross State Product (GSP).

Employment – Economic impacts of rail extend beyond the 6,762 directly employed in the provision of rail transport (both passenger and freight). When the freight and visitor impact activities and multiplier impacts are included, rail-related employment in Virginia amounts to 341,519 jobs, which represent 6.7 percent of the 5.1 million jobs statewide.

Tax Revenue – Federal, state and local tax revenues generated by the rail industry totaled $1.9 billion.

Investment in the rail network also has a direct benefit to Virginia's highway system. By diverting freight and passenger traffic from road to rail, Virginia's rail network helps by growing the economy, relieving congestion, saving lives, improving air quality, saving money, and complementing the Virginia highway network while reducing capital and maintenance expenditures.

RELIEVE CONGESTION

$312M ANNUAL IN CONGESTION SAVINGS
$123M ANNUAL PAVEMENT MAINTENANCE SAVINGS (6% OF VDOT MAINTENANCE BUDGET)

8 = **240**
PASSENGER RAILCARS *PASSENGER VEHICLES*

100 = **340**
FREIGHT RAILCARS *SEMI-TRAILER TRUCKS*

TRAVEL SAFE

18 LIVES SAVED AND 3,000 CRASHES AVOIDED EACH YEAR

Shipping by rail avoids about **1.7 billion miles** of truck travel in Virginia

Passenger travel by rail avoids about **271 million miles** of personal driving in Virginia

BREATHE EASIER

3M TONS OF CO2 EMISSIONS AVOIDED
(6.4% OF TOTAL IN VIRGINIA PER YEAR)

On average, railroads are **four times** more fuel efficient than trucks

Moving freight by rail instead of truck generates **75% less** greenhouse gas emissions

The total estimated level of rail service in Virginia in 2015 was about **25 billion ton-miles**

SAVE MONEY

RAIL SERVICES DRIVE 6% OF VIRGINIA'S TOTAL ECONOMY.
MORE THAN 6,000 JOBS CREATED DIRECTLY BY RAIL NETWORK

FREIGHT RAIL

$2.2 BILLION in cost avoidance

about 9 cents per ton-mile of rail use

PASSENGER RAIL

$190 MILLION in cost avoidance

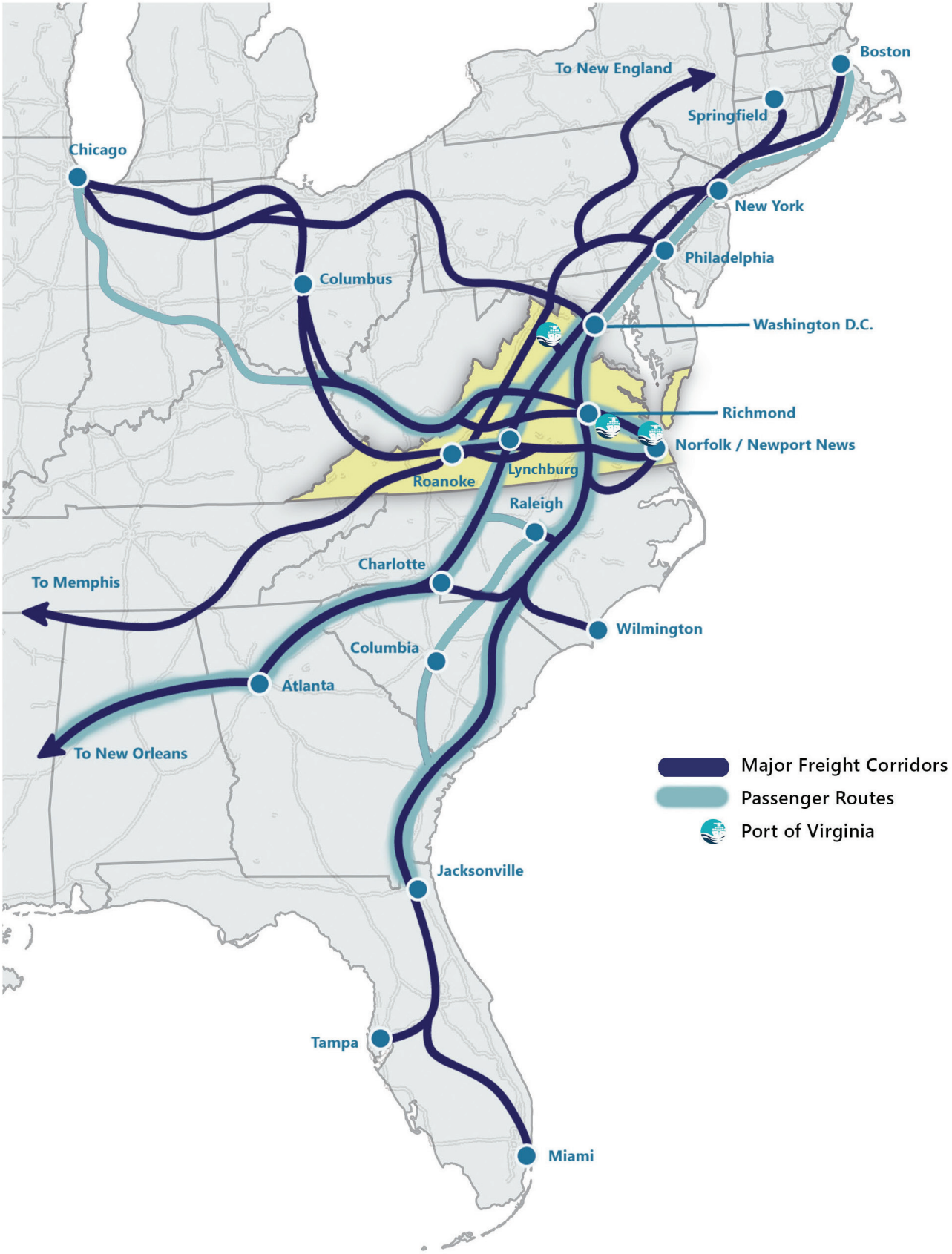
about 46 cents per passenger-mile of rail use

Virginia's Rail Systems, continued

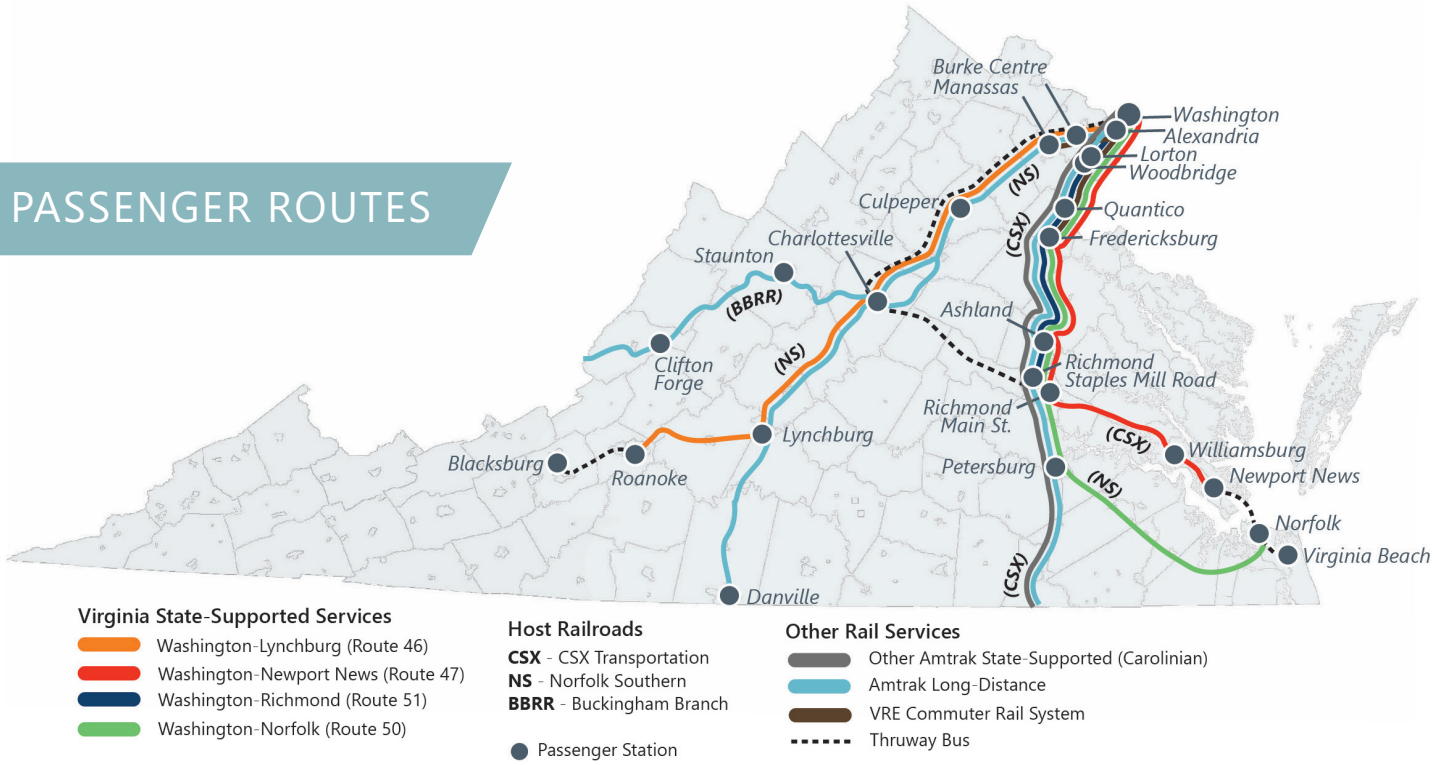
Virginia's rail network is a critical link in a larger rail system within the eastern United States; it connects the state's ports, businesses, and communities to other major population centers, customers, and manufacturing regions throughout the nation and the world. Corridors within the Commonwealth have unique characteristics that provide alternative transportation options and diverse public benefits to the economy. Many of Virginia's freight corridors also carry passenger trains. All of the freight corridors are privately-owned and serve the Port of Virginia in Hampton Roads in some capacity.

- CSX Transportation's I-95 Corridor spans the entire Eastern U.S., linking cities, ports, and manufacturing regions along the eastern seaboard. This corridor also carries the majority of Virginia's Amtrak passenger services, and serves as the gateway to Washington, D.C. for Virginia Railway Express commuter trains.
- CSX's National Gateway also uses the I-95 Corridor route through Virginia. This key rail artery diverges from the I-95 Corridor in Washington, D.C. to link the Port of Virginia and other mid-Atlantic ports with cities and markets in the U.S. Midwest.
- Norfolk Southern's Crescent Corridor runs from north to south, serving consumer markets and manufacturing regions between New Orleans, Memphis, and the Northeast. In Virginia, the Crescent Corridor serves the Virginia Inland Port – an intermodal container transfer facility in Front Royal – and carries several Amtrak services into the Northeast.
- Norfolk Southern's Heartland Corridor links Virginia's Port to Midwest markets, carrying intermodal containers from the docks in Hampton Roads to consumers in Chicago.
- Amtrak services are shown on the map as light blue shading along the privately owned freight corridors. Amtrak services operate over privately-owned railroads in Virginia. Virginia regional service provides one-seat rides from Virginia's major cities to Washington, D.C. and the Northeast Corridor, while Amtrak long-distance trains carry passengers through Virginia between the Northeast, Southeast, and Midwest.

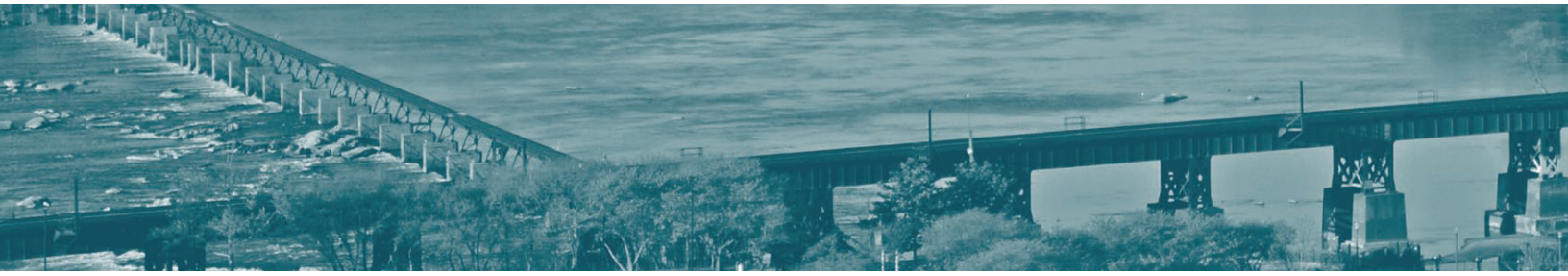
VIRGINIA IS A CRITICAL LINK IN THE NATIONAL RAIL NETWORK



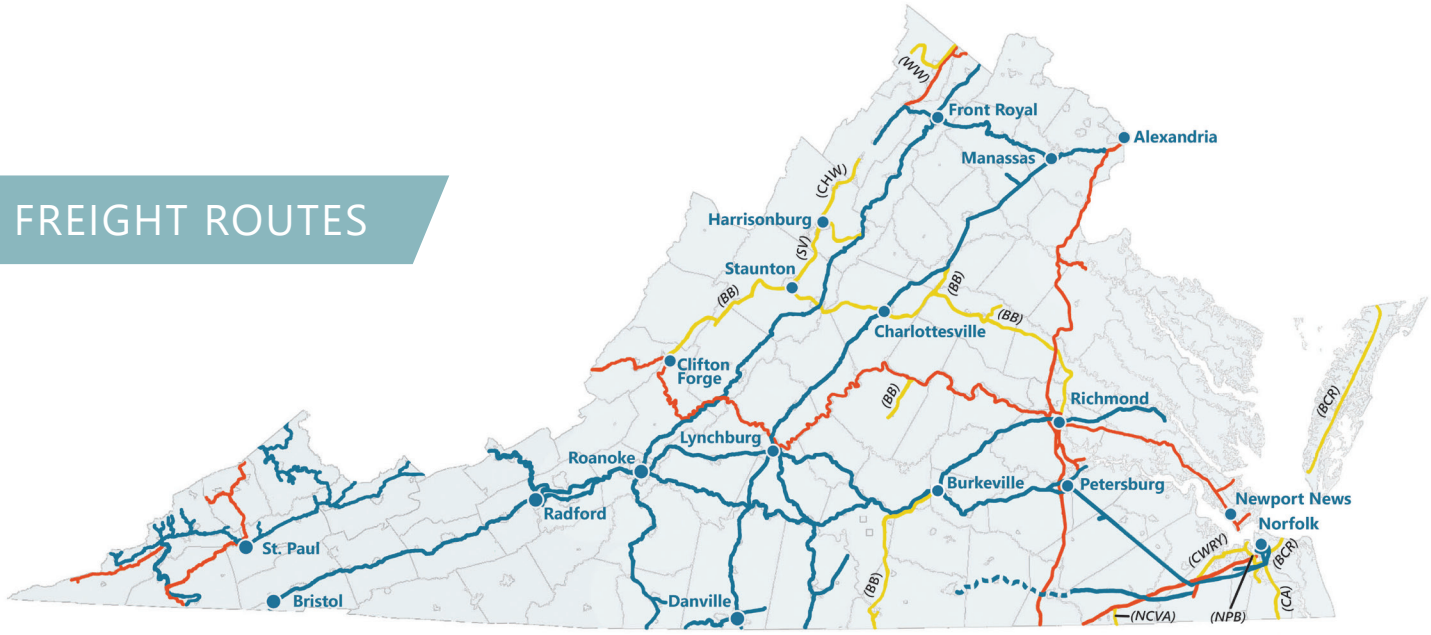
PASSENGER ROUTES



Passenger trips to, from, and within Virginia are growing and highways in Virginia are increasingly congested. Passenger rail service provides an alternative to congested highways, and the Commonwealth therefore invests in Amtrak intercity passenger routes, as well as Virginia Railway Express commuter service to improve mobility and meet the growing demand for travel. Projects and plans underway in CSXT's RF&P subdivision and the Long Bridge across the Potomac to Washington, D.C. will alleviate existing rail bottlenecks to better connect the entire Southeast region with Amtrak's Northeast Corridor. Since 2013 Virginia has provided dedicated funding to support and expand intercity passenger rail operations across the state. Virginia's busiest passenger rail routes parallel the heavily traveled I-95 corridor, where a growing number of Virginia regional service trains serve Richmond, Newport News, and Norfolk. Additional Virginia regional services extend southwest from Washington, D.C. to Lynchburg and Roanoke. Passenger volumes on Virginia regional service totaled over 830,000 riders in FY2016. When combined with long distance service, passenger volumes exceeded 2.5 million riders. Virginia also supports commuter rail operations provided by Virginia Railway Express, which serves the heavily congested I-95 Corridor from Fredericksburg to Washington, D.C. as well as the I-66 Corridor between Manassas and Washington, D.C.



FREIGHT ROUTES



Freight Routes in Virginia

- Norfolk Southern
- CSX Transportation
- Shortline
- Discontinued
- Cities/Towns

Host Railroads

BCR	Bay Coast Railroad
BB	Buckingham Branch Railroad
CA	Chesapeake & Albemarle Railroad
CHW	Chesapeake Western Railway
CWRY	Commonwealth Railway
NPB	Norfolk & Portsmouth Belt Line Railroad
NCVA	North Carolina & Virginia Railroad
SV	Shenandoah Valley Railroad
WW	Winchester & Western Railroad

As the economy grows, so do the freight demands on Virginia's highways. The Commonwealth recognizes the public benefits and economic impact of investments in a multimodal freight transportation system. The freight rail network has a unique role supporting the Port of Virginia's target markets in the Midwest. Both CSX and Norfolk Southern have intermodal rail corridors that connect Virginia to the nation, providing a cost-effective way to bring needed raw materials and products to our ports, manufacturers, and consumers, and to carry Virginia-made products and materials to destinations throughout the nation. In 2012, Virginia's rail network carried more than 800,000 carloads of coal, 534,000 carloads of mixed goods, 120,000 carloads of chemical products, 103,000 carloads of food products, and 85,000 carloads of pulp and paper products, keeping more than 5.5 million trucks off the Commonwealth's highways. Savings in pavement maintenance costs alone are estimated to be over $123 million per year, almost 6% of VDOT's annual maintenance budget.

FUTURE OF RAIL IN VIRGINIA

FUTURE OF RAIL

Virginia's passenger and freight rail networks are affected by many external factors that drive demand for services. Freight rail corridors serving the Port of Virginia and the main north-south freight routes are experiencing growth in intermodal traffic, while changes in domestic energy production and use are reflected in a decrease in coal traffic. Population growth, an aging population, and increasing highway congestion along the "urban crescent" between Washington and Hampton Roads is helping drive demand for environmentally friendly and safe alternatives to automobile travel. Innovation and ever-evolving technologies will continue to drive advancements in the rail industry. The Commonwealth addresses these drivers by investing in the rail network as part of a multimodal approach to meet the growing demand for freight and passenger transportation service and support the economic changes and travel preferences of Virginians.

RAIL INDUSTRY DRIVERS

- Growth in Intermodal Traffic
- Changes in Energy Production: Oil, Gas and Coal
- Congestion
- Environmental
- Technology
- Demographic Changes
- Aging Infrastructure
- Changes in Rail Governance Framework
- Amtrak Northeast Corridor

FREIGHT

Freight tonnage is expected to grow by 50% in Virginia by 2040

Movement by rail will increase by 14%; additional rail investment can enhance rail's modal share and keep additional freight from congested roadways.

Port of Virginia Shipments

TEUs anticipated to more than triple from 2.1 M in 2012 to 7.2 M in 2040.

Capacity to move 45% by rail in 2040, up from 35% today.

Expected Evolution of Major Freight Markets

Growth in intermodal traffic will impact operational approach to major freight corridors. Intermodal movement relies on tight timetables and high demand for on-time performance.

NETWORK SIGNIFICANCE

The Washington, D.C. metropolitan area has the nation's highest rate of congestion.

The Hampton Roads area also experiences high levels of congestion.

[Measuring Traffic Congestion in Virginia - Virginia Performs, Virginia.Gov]

Vehicle use per road-mile has been increasing for decades.

Since the mid-1960s Virginia has experienced a decline in relative capacity as both population and state gross domestic product (GSP) have steadily risen.

[Measuring Traffic Congestion in Virginia - Virginia Performs, Virginia.Gov]

Economic Growth

Virginia's rail network is a key link between two mega-regions, the Northeast mega-region and the Piedmont Atlantic mega-region to the south. Most of the nation's population growth and economic expansion is occurring in ten emerging mega-regions.

America2050
www.america2050.org

PASSENGER

Population concentrated in the urban crescent

Since 2010, the share of Virginia's total population growth in the urban crescent rose to 93 percent, up from 81 percent between 2000 and 2006. Much of this population growth is young professionals/Millennials.

Population is growing older – 1 in 8 Virginians is 65 or older,

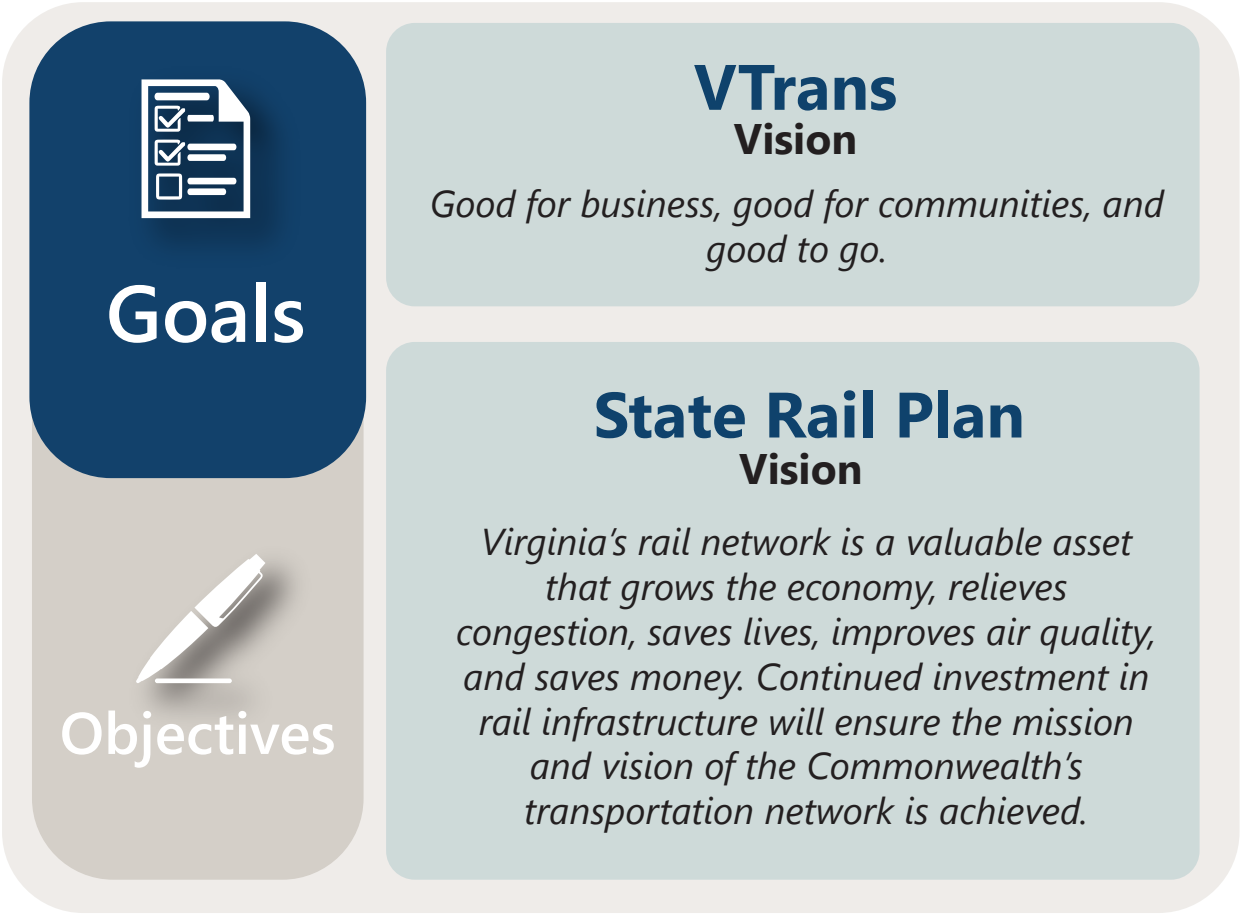
and the largest concentration of Virginia's aging population lives in the urban crescent.

[DC2RVA Purpose and Need]

Increasing demand for public transportation

Urban environments conducive to public transportation and changing demographics create more reliance on multi-modal options.

VIRGINIA'S VISION FOR THE FUTURE



Goals and objectives link visions to prioritize investments in rail.

Virginia's Statewide Transportation Plan (Vtrans2040) provides a planning framework for all transportation modes in the state, including rail and public transit. Virginia's vision for its multimodal transportation system, described in Vtrans2040, is to be "Good for Business, Good for Communities, and Good to Go". Virginians will benefit from a sustainable and reliable transportation system that advances Virginia businesses, attracts a 21st century workforce, and promotes healthy communities where Virginians of all ages and abilities can thrive.

The Department of Rail and Public Transportation (DRPT) serves as Virginia's lead agency for rail and public transportation, with the mission to facilitate and improve the mobility of the citizens of Virginia and to promote the efficient transport of goods and people in a safe, reliable, and cost-effective manner. DRPT is also responsible for administering funds for rail investments and public transportation agency formula funds.

The Virginia State Rail Plan recognizes Virginia's vision and DRPT's mission and provides a framework for achieving both of these desired future outcomes through investments in Virginia's rail network as part of a multimodal transportation system supporting economic growth.

RAIL PLAN GOALS AND OBJECTIVES

The Virginia Rail Plan goals are listed in blue and reflect the Vtrans2040 Guiding Principles. Corresponding objectives for each goal are shown in tan on the right.

The objectives show how DRPT can advance freight and passenger rail through planning efforts and funding programs under DRPT's purview. Together the Rail Plan goals and objectives are tools to evaluate and prioritize short-term and long-term planning efforts and investments.

GOAL:
Optimize Return on Investments

Implement the right solution at the right price

OBJECTIVES:

- Leverage previous investments by supporting existing passenger services
- Enhance reliability for existing services
- Prioritize improvements to existing service corridors over service expansion capital projects
- Target growing markets and make efficient use of the Rail Industrial Access Program funds
- Leverage public-private partnerships by prioritizing projects with matching funds
- Target investment where traffic, employment, population, or demand is expected to grow
- Prioritize capacity investments that meet the needs of both the public and private sectors through enhanced data sharing
- Determine on a corridor-basis when rail is the most efficient mode to move people and goods

GOAL:
Ensure Safety, Security, and Resiliency

Invest in projects that harness the safety benefits of moving people and goods by rail

OBJECTIVES:

- Expand programs that support shortline railroads in maintaining FRA Class 2 track safety standards
- Invest in materials and industry practices that support a resilient rail network
- Prioritize critical infrastructure projects to reduce the risk of failure
- Support "State of Good Repair" projects

OBJECTIVES:

GOAL:
Efficiently Deliver Programs

Deliver high-quality projects and programs in a cost-effective and timely manner

- Update grant guidance annually and develop a grantee workshop to review program guidance and procedural updates
- Proactively identify projects and programs to support the DRPT mission
- Work with legislators and appointed officials to ensure policies are up-to-date and understood
- Continually update DRPT grant management practices to ensure efficient administrative processes and project implementation

OBJECTIVES:

GOAL:
Consider Operational Improvements and Demand Management First

Maximize capacity of the transportation network through increased use of technology and operational improvements before investing in major capacity expansions

- Encourage use of Intelligent Transportation Systems to improve operational efficiency
- Evaluate operations when considering investment in capacity to ensure the investment yields a lasting benefit
- Incorporate program criteria that prioritize low-cost improvements to relieve bottlenecks and provide capacity

OBJECTIVES:

GOAL:
Ensure Transparency and Accountability, and Promote Performance Management

Work openly with partners and engage stakeholders in project development and implementation, and establish performance targets that consider the needs of all communities

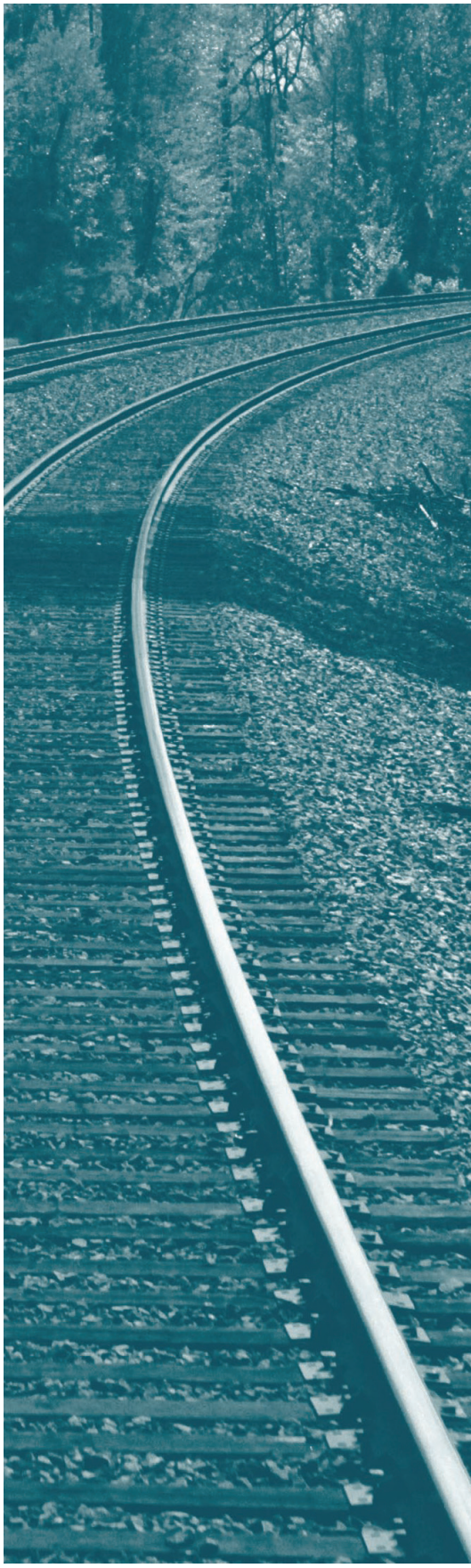
- Publicize application evaluation metrics and project data for rail funding programs
- Implement passenger rail station stop policy
- Develop program scorecards to measure impact of rail investments
- Market economic impact of rail investment

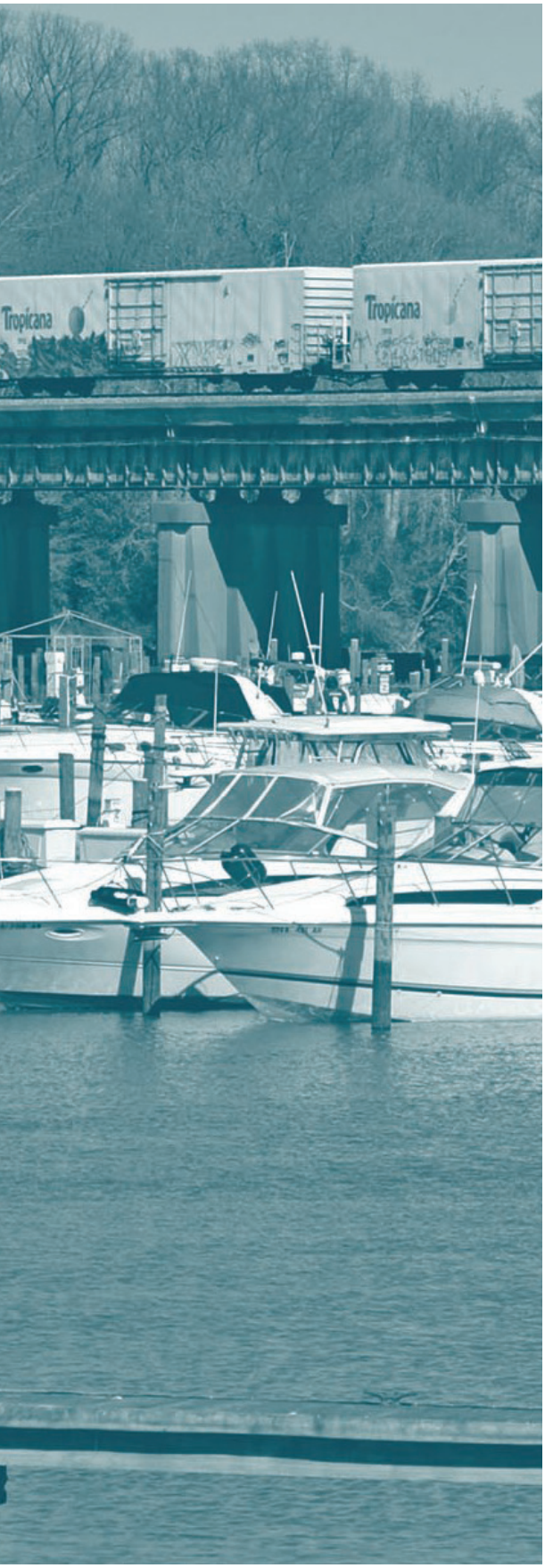
OBJECTIVES:

GOAL:
Improve Coordination between Transportation and Land Use

Encourage local governments to plan and manage transportation-efficient land development by providing incentives, technical support, and collaborative initiatives

- Encourage local governments to support state funding decisions by making compatible investments and zoning
- Educate localities on appropriate land uses around both freight and passenger rail infrastructure
- Encourage local governments to support rail services with multimodal last-mile connections
- Integrate with and expand upon other state, regional, and local planning efforts





OBJECTIVES:

GOAL:
Ensure Efficient Intermodal Connections

Provide seamless connections between modes of transportation

- Prioritize rail projects that benefit the highway system and improve mode choice
- Enhance rail service to the Port
- Support " State of Good Repair" and capacity projects with shortlines

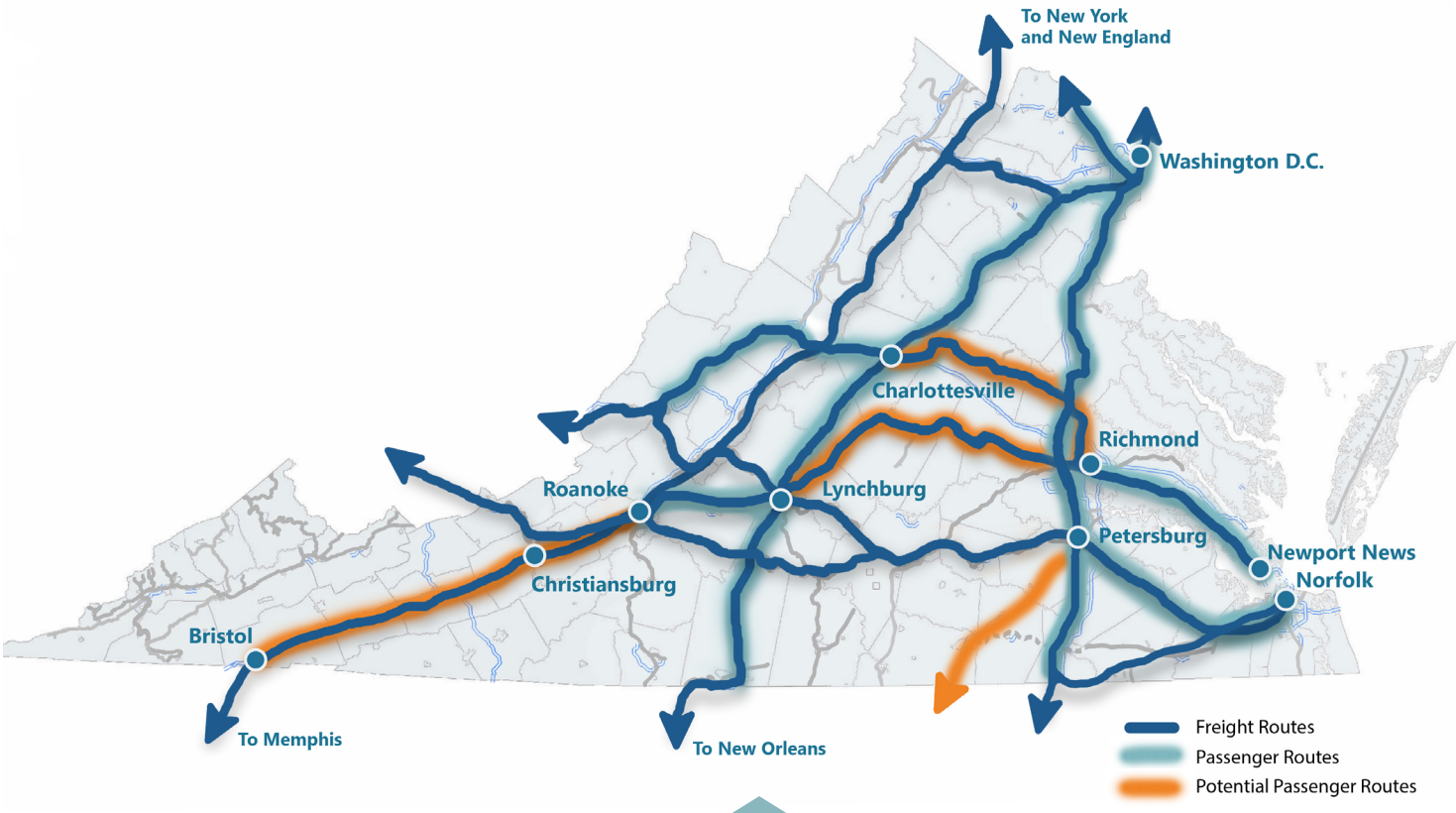
OBJECTIVES:

GOAL:
Support Regional Economic Development

Encourage local and regional economic development through investment in the rail network

- Work closely with Virginia Economic Development Partnership to attract rail conducive industries in accordance with the Code of Virginia
- Promote the use of the Rail Industrial Access program through education and outreach with local economic development offices
- Include input from local and regional freight railroads in economic development planning and initiatives
- Expand transportation options between regional markets through enhancements to passenger rail service

PRIORITY IMPROVEMENTS & INVESTMENTS



This statewide map depicts a comprehensive, visionary illustration of the future of rail in Virginia. Details about each corridor, including programmed and potential projects, are included in the body of the plan.

The Commonwealth's investment priorities have been summarized by corridor in the following pages. Each corridor fact sheet is designed to correspond with the Corridors of Statewide Significance, as outlined in VTrans; and provides:

BACKGROUND
Describes the major elements, geography and services of the corridor.

SIGNIFICANCE
Overviews the unique characteristics and purpose the corridor provides within the greater transportation network.

PROJECTS
Outlines some of the major initiatives that are on-going and expected for the future in the corridor.

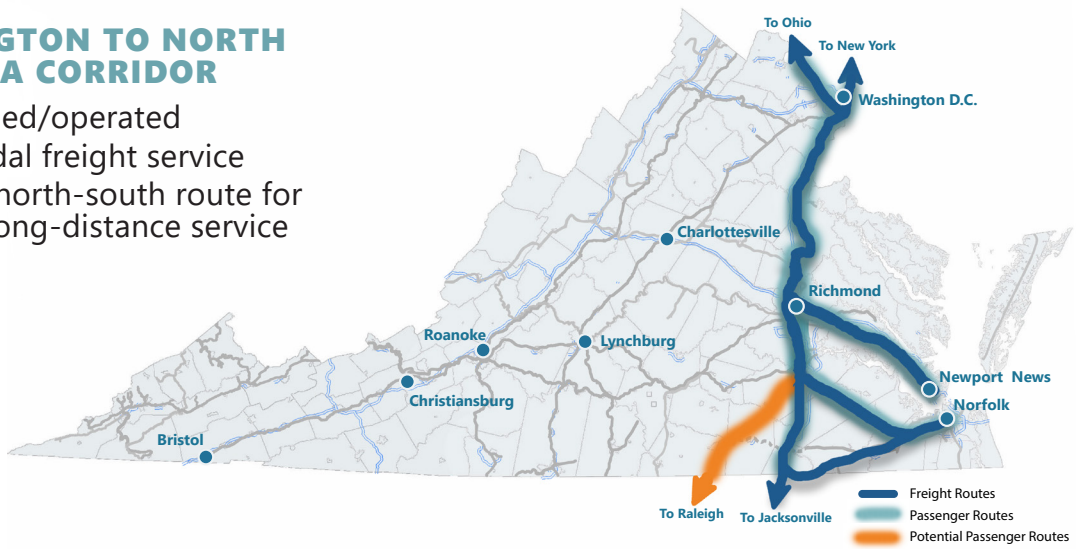
TOP DRIVERS

KEY GOALS

Additionally, each fact sheet provides a link to the Key Goals and Top Drivers in the corridor. Due to the significance of each corridor within the multimodal transportation network, all of the rail plan goals and drivers influence decision making within each corridor. However, the goals and drivers that have the strongest correlation to the corridor characteristics, needs, and influences have been highlighted.

WASHINGTON TO NORTH CAROLINA CORRIDOR

- CSX owned/operated
- Intermodal freight service
- Primary north-south route for Amtrak long-distance service



BACKGROUND

Virginia's Washington to North Carolina Corridor is served by two CSX rail corridors: CSX's I-95 Corridor between New York and Jacksonville, and CSX's National Gateway Corridor linking mid-Atlantic ports with the Midwest. The two rail corridors share one alignment that parallels I-95 from Washington, D.C., through Richmond to Petersburg and the south. This corridor also serves as a primary passenger rail route. Virginia regional trains connecting the Northeast Corridor and Washington, D.C. operate on the line to reach terminals in Richmond, Newport News, and Norfolk, while Amtrak long-distance trains from New York and Lorton, Virginia, continue farther south to Savannah, Sanford, Florida, and Miami. VRE Fredericksburg Line commuter trains also use the corridor from Spotsylvania County north to Washington, joined at Alexandria by Manassas Line commuter trains.

SIGNIFICANCE

The Washington to North Carolina Corridor is the most heavily used corridor in Virginia, with increasing freight, regional and long distance passenger rail, and commuter rail services. The corridor provides a critical link between Amtrak's Northeast Corridor and the federally designated Southeast Corridor. The corridor also provides another rail link between the Port of Virginia and the Midwest, which previous Commonwealth investments have helped to clear for double-stack container service. The corridor has the most severe bottlenecks on the freight rail network, specifically across the Potomac River, where a four track system merges to just two tracks (the Long Bridge) to cross from Virginia into Washington, D.C.

Similarly, the parallel highway facilities, I-95 and US 1, are the most heavily used highway facilities with the most severe congestion in Virginia. As a result, capacity on the Washington to North Carolina Corridor must be preserved and improved in order to provide adequate access and multimodal options to both the residents and businesses along this dense and thriving corridor. The passenger rail, commuter rail, and intermodal freight services that use this corridor, including shipments serving the Port of Virginia, require high on-time performance.

PROJECTS

Priority projects include adding capacity to the Long Bridge, a major chokepoint affecting CSX, Amtrak, and VRE service, and implementing additional capacity improvements to the corridor in Northern Virginia via the Atlantic Gateway improvement program.

Longer term, additional improvements will be necessary to support improved passenger service. These improvements are outlined in the R2R study, and in the DC2RVA Tier 2 EIS that is currently underway. The long term phasing and timing of these improvements will be based on funding availability, congestion levels, and passenger service benefits.

TOP DRIVERS

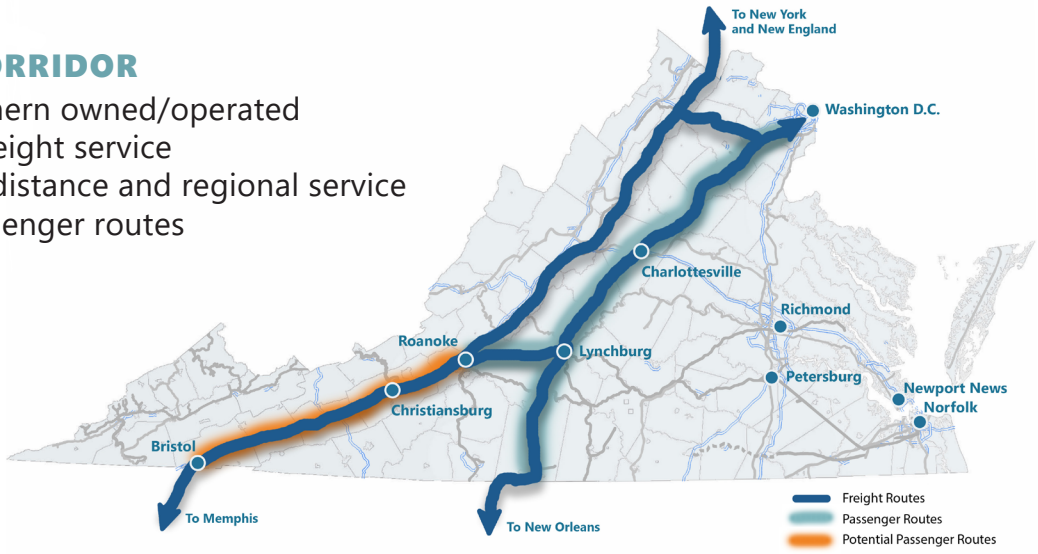
- Congestion
- Demographic Changes
- Amtrak Northeast Corridor
- Technology

KEY GOALS

- Optimize Return on Investments
- Consider Operational Improvements and Demand Management First
- Ensure Efficient Intermodal Connections

CRESCENT CORRIDOR

- Norfolk Southern owned/operated
- Intermodal freight service
- Amtrak long distance and regional service
- Potential passenger routes



BACKGROUND

The 2,500-mile Crescent Corridor spans 11 states, from New York to Louisiana and Tennessee. In Virginia it includes Norfolk Southern track parallel to I-81 (Winchester-Roanoke-Bristol) and a second route parallel to U.S. 29 (Front Royal-Manassas-Lynchburg-Danville).

The Crescent Corridor is a primary freight route for intermodal traffic moving through Virginia. The corridor also carries both Amtrak long distance trains (Crescent and Cardinal) and Virginia regional passenger service connecting Roanoke, Lynchburg, and Charlottesville to Washington, D.C. and the Northeast Corridor. The corridor connects to Norfolk Southern's Heartland Corridor in Roanoke and Altavista.

SIGNIFICANCE

The Crescent Corridor makes several vital connections to Virginia shortline railroads, including the Winchester & Western, Chesapeake Western, Buckingham Branch, and Shenandoah Valley railroads. In addition, the corridor connects to the Virginia Inland Port. Maintaining a seamless connection between this mainline freight route and these critical elements of the regional freight network is vital to the success of this corridor and regional economic development. Norfolk Southern estimates the Crescent Corridor keeps 1.3 million long distance trucks off the highways.

PROJECTS

Priority projects include expanded passenger service to Lynchburg and Roanoke, and improving capacity and connectivity with shortline railroads and the Virginia Inland Port. Longer term considerations for this corridor include adding passenger service to southwest Virginia.

TOP DRIVERS

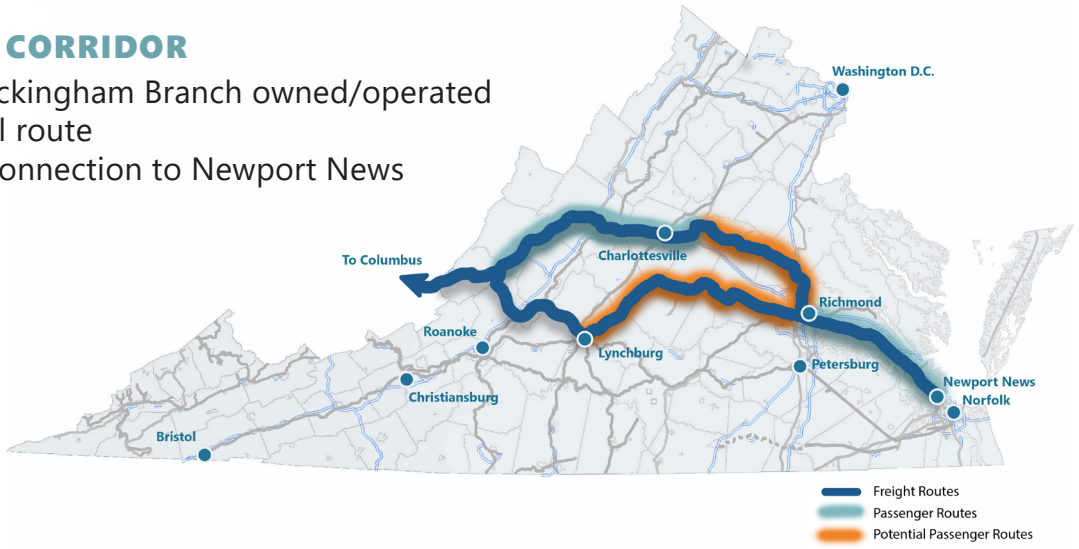
- Congestion
- Demographic Changes
- Amtrak Northeast Corridor

KEY GOALS

- Optimize Return on Investments
- Improve Coordination between Transportation and Land Use
- Support Regional Economic Development

EAST-WEST CORRIDOR

- CSX and Buckingham Branch owned/operated
- Primary coal route
- Passenger connection to Newport News



BACKGROUND

The East-West Corridor parallels I-64 from Hampton Roads through Richmond to Clifton Forge. It serves as CSX's primary coal route from Appalachian coalfields to U.S. power plants and export terminals in Newport News. Loaded coal trains travel east on CSX's James River line, while empty trains return on the Buckingham Branch.

The corridor handles Virginia regional passenger service from Newport News, ultimately making connections to Washington, D.C. and Amtrak's Northeast Corridor. Additionally, the Buckingham Branch carries the Amtrak long distance Cardinal route with connections to the Midwest and NEC.

SIGNIFICANCE

The East-West Corridor serves primarily as a coal route, however, coal traffic has significantly dropped in response to recent changes in energy trends and a decline in demand for Appalachian coal. As a result, one of the primary drivers of investment is to maintain operability of the multiple passenger rail services.

PROJECTS

Priority projects include maintaining a state of good repair, particularly on the Buckingham Branch railroad, and supporting existing passenger services. This includes investments to add a new maintenance facility and improvements to reduce conflicts between passenger trains and freight trains on the corridor between Richmond and Newport News. Longer term considerations include expansion of east-west passenger connections.

TOP DRIVERS

- Changes in Energy Production
- Amtrak Northeast Corridor
- Aging Infrastructure
- Technology

KEY GOALS

- Ensure Safety, Security and Resiliency
- Improve Coordination between Transportation and Land Use
- Ensure Transparency and Accountability, and Promote Performance Management
- Support Regional Economic Development

HEARTLAND CORRIDOR

- Norfolk Southern owned/operated
- Intermodal freight service
- Passenger connection to Norfolk

BACKGROUND

The Heartland Corridor is a primary freight route for intermodal traffic traveling between the Port of Virginia terminals in Norfolk and midwestern markets, including Columbus and Chicago. The Heartland Corridor also carries Virginia regional passenger trains between Norfolk and Petersburg, as well as a new service extension between Lynchburg and Roanoke. Both services ultimately connect to Washington, D.C. and the Northeast Corridor. The Heartland Corridor connects to the Crescent Corridor in Roanoke and Altavista.

SIGNIFICANCE

Through significant previous investment, the corridor is cleared for double-stack container service from the Port, through Virginia, to Chicago. Tight timetables and high demand for on-time performance are critical needs to adequately serve intermodal customers. It is critical to eliminate any congestion points, particularly conflicts with passenger services, on this dense intermodal corridor.

PROJECTS

Priority improvements include adding two additional round-trip passenger trains to Norfolk by extending two existing trains from Richmond. Longer term initiatives include the study of additional and/or higher speed passenger services to Hampton Roads and making critical east-west multimodal connections.

TOP DRIVERS

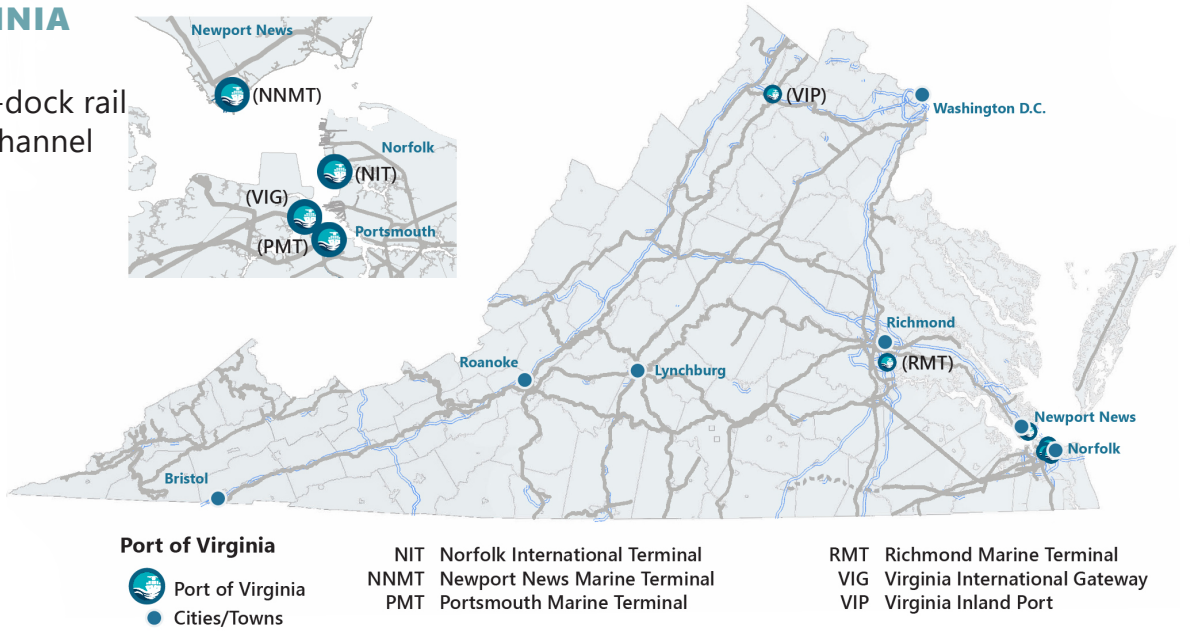
- Growth in Intermodal Traffic
- Changes in Energy Production
- Environmental

KEY GOALS

- Ensure Safety, Security and Resiliency
- Improve Coordination between Transportation and Land Use
- Support Regional Economic Development
- Ensure Efficient Intermodal Connections

PORT OF VIRGINIA

- 6 terminals
- 30 miles of on-dock rail
- 55 foot deep channel



BACKGROUND

The Port of Virginia is the 5th largest container port in the nation. Port facilities include 4 deepwater marine terminals (Hampton Roads), an upriver terminal (Richmond) and an inland intermodal terminal (Front Royal). The Port is served by more than 30 international shipping lines, serving more than 200 countries. More than 33% of the Port's freight arrives and departs by rail, carried by NS, CSX, and two shortlines, the Norfolk & Portsmouth Belt Line and the Commonwealth Railway.

The Port primarily ships to customers in Virginia, North Carolina, Maryland, and West Virginia via truck, and to Ohio, Indiana, Illinois, Tennessee, Kentucky, and beyond via Norfolk Southern and CSX.

SIGNIFICANCE

The Port is one of the most significant drivers of freight rail traffic in the Commonwealth. Due to changes in energy demand and production, intermodal traffic is the most dominant growth sector in freight rail traffic, and the Port is well poised to contribute heavily to that growth market. Ensuring efficient loading and unloading of trains, and last mile connectivity to the freight rail network are vital to ensuring that business at the Port continues to run smoothly and drive the Virginia economy forward.

PROJECTS

Priority projects includes multiple terminal expansions, including VIG, VIP, and NIT, with additional rail capacity, and ensuring shortline and switch operators outside the Port gates have the needed capacity to handle the additional growth in rail traffic.

Additional priority projects include expanding the inland port at Front Royal and improving rail infrastructure, including grade crossings on tracks serving the Ports.

TOP DRIVERS

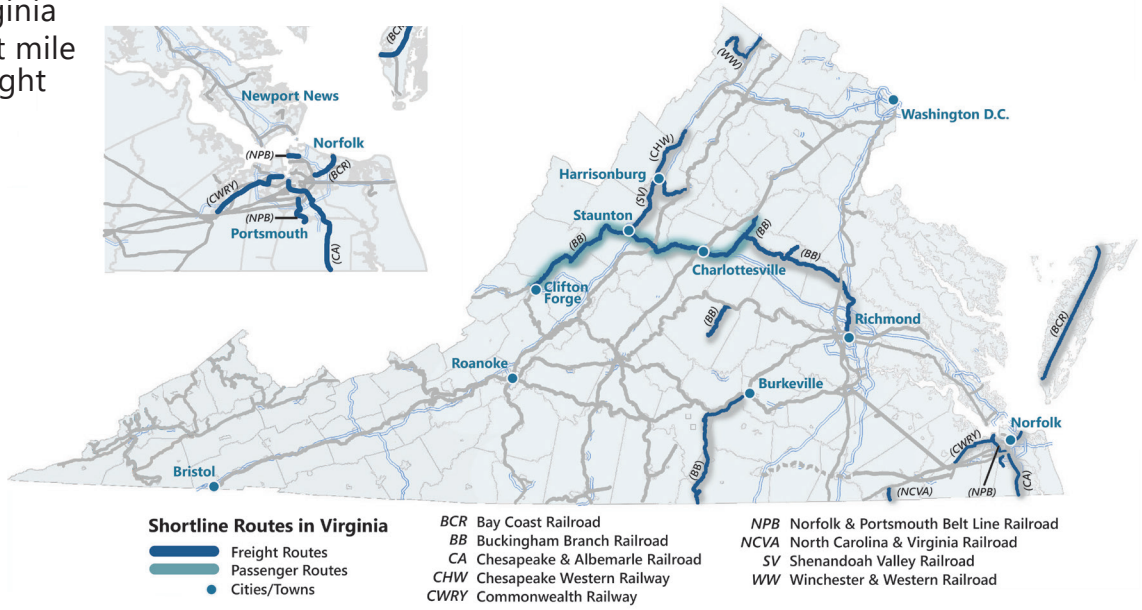
- Growth in Intermodal Traffic
- Congestion
- Environmental
- Technology

KEY GOALS

- Ensure Transparency and Accountability, and Promote Performance Management
- Ensure Efficient Intermodal Connections
- Support Regional Economic Development

SHORTLINE ROUTES IN VIRGINIA

- 9 shortlines in Virginia
- Important first/last mile connection for freight



BACKGROUND

Virginia's shortline railroads operate at the regional and local level to connect individual customers to the larger freight rail network and make last mile connections to the Port of Virginia. Shortline railroads often serve as either the point of origin or termination for freight carried in and out of Virginia by Norfolk Southern or CSX.

Virginia supports shortlines through the Rail Preservation Program, which funds both capacity and state of good repair projects.

SIGNIFICANCE

Shortlines provide a critical link to local and regional customers, as well as the Port, loading, unloading, and building trains that eventually traverse the national rail network through Class I freight service. Many of the shortlines inherited track with years of deferred maintenance, requiring additional resources to maintain a state of good repair.

Shortlines are better positioned to accommodate smaller businesses with lower traffic volumes. Virginia supports shortlines as both a partner in economic development opportunities at the port facilities and in rural areas, and as a means to divert trucks from congested highways.

PROJECTS

Priority projects include improving track to FRA Class 2 safety standards; improving signal systems and technology for more efficient operations; and upgrading bridges and track to accommodate heavier railcars that have become the industry standard. Longer term priority projects includes critical infrastructure rehabilitation such as bridges and tunnels, which, if allowed to fail, would create significant safety hazards and may make the entire rail line inoperable.

TOP DRIVERS

- Changes in Energy Production
- Aging Infrastructure
- Changes in Rail Governance Framework
- Technology

KEY GOALS

- Ensure Safety, Security and Resiliency
- Improve Coordination between Transportation and Land Use
- Support Regional Economic Development

VIRGINIA STATE RAIL PLAN

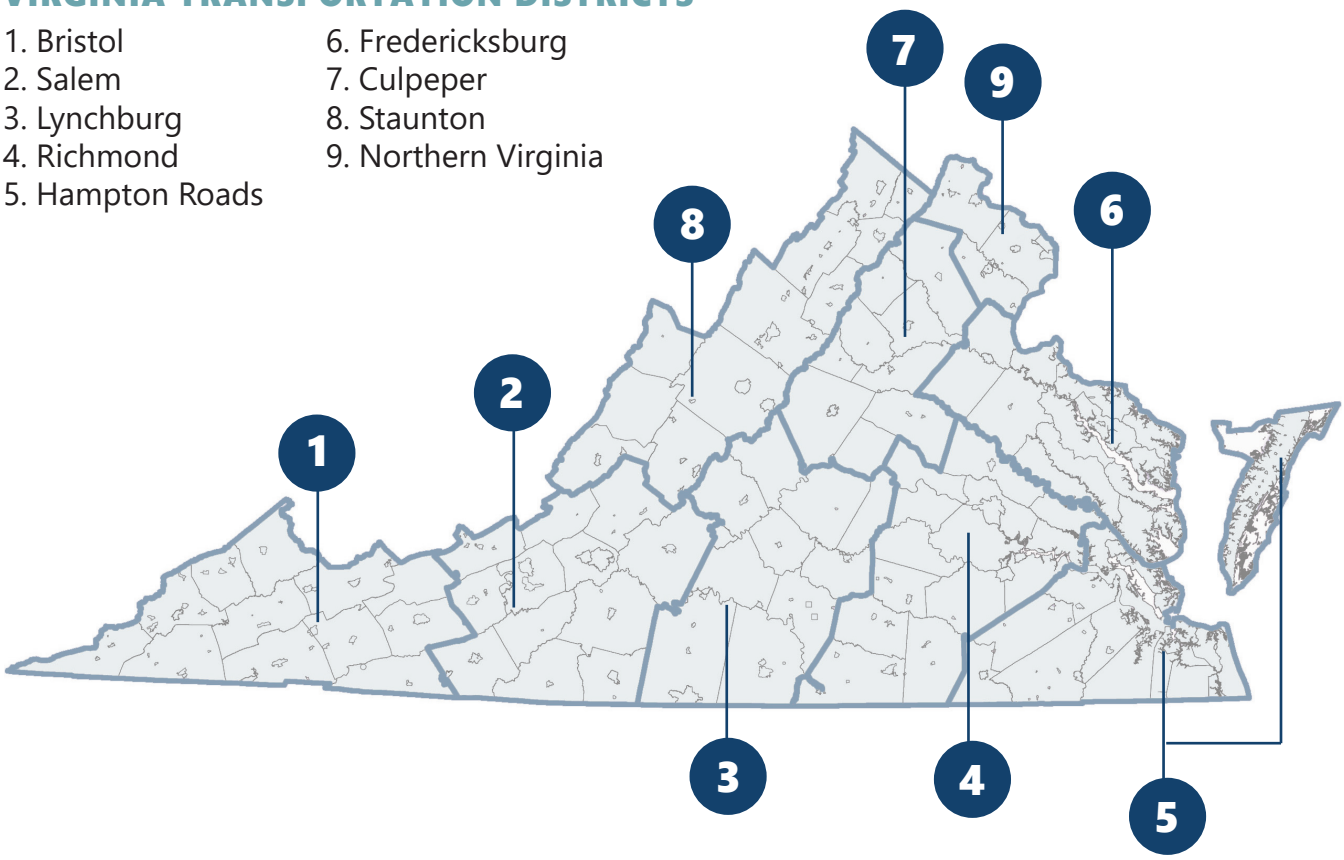
The 2017 Virginia State Rail Plan was developed by the Virginia Department of Rail and Public Transportation (DRPT) under the guidance of the Commonwealth Transportation Board (CTB) Rail Committee to address changes in the rail industry and prioritize Virginia's investments in freight and passenger rail services and infrastructure across the Commonwealth. This State Rail Plan guides Virginia's vision for railroad transportation to the horizon year of 2040, and lists strategies to achieve that vision.

The State Rail Plan meets the federal requirements of the Passenger Rail Investment and Improvement Act of 2008, as amended by the Fixing America's Surface Transportation Act of 2015. In addition, this State Rail Plan also meets the requirements of the State Rail Plan Guidance provided by the Federal Railroad Administration (FRA) in September 2013.

CHAPTER INDEX

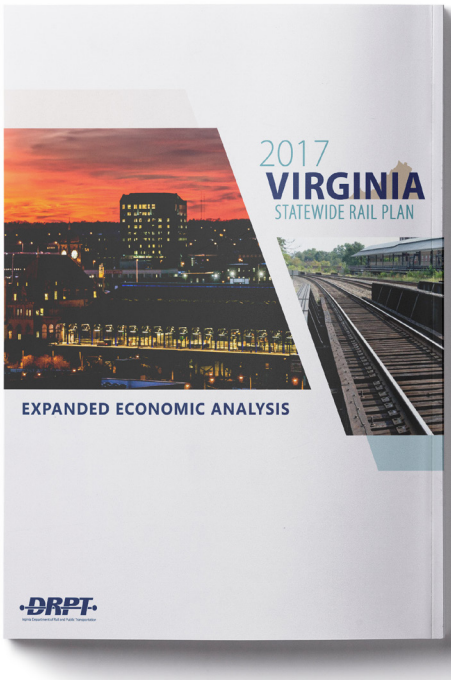
VIRGINIA TRANSPORTATION DISTRICTS

1. Bristol
2. Salem
3. Lynchburg
4. Richmond
5. Hampton Roads
6. Fredericksburg
7. Culpeper
8. Staunton
9. Northern Virginia



ECONOMIC ANALYSES

This report evaluates freight flows within Virginia by county and corridor. The estimation of volumes by location of shippers and receivers is intended to inform local and state discussions about the opportunities and constraints in the existing rail and road transportation network.
The report includes: Freight Demand Baseline Analysis, Freight Forecast, and a Regional Economic Analysis of Expanded Freight Demand. County-level results are aggregated and reported by Transportation District.



Virginia Department of Rail and Public Transportation

Department of Rail & Public Transportation
600 East Main Street, Suite 2102
Richmond, VA 23219
(804) 786-4440

www.drpt.virginia.gov

Public Affairs and Media Inquiries
drptpr@drpt.virginia.gov

VIRGINIA
STATEWIDE RAIL PLAN

CHAPTER 1

ROLE OF RAIL IN STATEWIDE TRANSPORTATION

December 6, 2017

CONTENTS

FIGURES

TABLES

1 Role of Rail in Statewide Transportation

Virginia's economic prosperity and quality of life are directly dependent on its rail network. Each day, thousands of people and hundreds of thousands of goods and products move across more than 3,000 miles of rail lines spanning the Commonwealth. In Northern Virginia, commuter trains provide an efficient way for people to travel between work and home, and a critical link to the Northeast Corridor (NEC), through one of the most congested regions of the United States. Farther south, long trains carrying 200 or more shipping containers move to and from the Port of Virginia on rails that form a critical link in an international supply chain. Across the state, businesses and manufacturing firms employing Virginia residents depend on the rail network to efficiently bring in raw materials and provide a cost-effective means of delivering finished products to consumer markets across the country. Virginia's location at the crossroads of several major rail lines gives the Commonwealth a major economic advantage that can help sustain and expand Virginia's economy for decades to come.

In 2015, the Virginia Department of Rail and Public Transportation (DRPT) and the Commonwealth Transportation Board (CTB) Rail Committee reviewed policies and procedures of the rail programs managed by DRPT staff. As part of that yearlong effort, the CTB Rail Committee recommended DRPT develop a State Rail Plan to reflect changes in the rail industry and prioritize Virginia's investments in the freight and passenger rail industry across the Commonwealth. This document was developed by DRPT to serve as Virginia's State Rail Plan and meet the federal requirements of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), as amended by the Fixing America's Surface Transportation Act of 2015 (FAST Act) and the September 2013 *State Rail Plan Guidance* provided by the Federal Railroad Administration (FRA). In addition to meeting federal requirements, this State Rail Plan is intended to publicize Virginia's vision for railroad transportation through the horizon year of 2040 and list strategies necessary to achieve that vision. The State Rail Plan was developed with public participation and involvement by the CTB Rail Committee, the Commonwealth's railroads, and stakeholders.

This chapter illustrates the current and proposed future role of rail in Virginia's multimodal transportation system and describes how the Commonwealth provides governmental, legal, and financial assistance to rail transportation in Virginia.

1.1 Planning Efforts to Support Virginia's Goals for its Multimodal Transportation System

Virginia's vision and goals for its multimodal transportation system are outlined in a number of recently published plans, including the Statewide Transportation Plan, State Freight Plan, and Statewide Transportation Improvement Program, described in the following chapters. Virginia's goals for its multimodal transportation system and this State Rail Plan are:

- Optimize return on investments
- Ensure safety, security and resiliency
- Efficiently deliver programs
- Consider operational improvements and demand management first
- Ensure transparency and accountability, and promote performance management
- Improve coordination between transportation and land use
- Ensure efficient intermodal connections
- Support regional economic development

Virginia's rail network is a valuable asset that drives the economy, reduces congestion, improves safety, and saves taxpayer money. Continued investment in rail infrastructure will ensure the vision and goals for the Commonwealth's transportation network is achieved.

1.1.1 Virginia's Statewide Transportation Plan

Virginia's current Statewide Transportation Plan (VTrans2040) provides direction for all transportation modes in the state, including rail and public transit.[1] The Vision component of the plan was adopted and approved in 2015. The Vision component of VTrans2040 outlines the vision, goals, objectives, the projected demand for transportation infrastructure and the social and economic changes that are expected to occur in the state between 2015 and 2040. VTrans2040 also underscores the idea that potential changes in catalytic factors, such as major economic generators, freight movement, household characteristics, land development patterns, transportation technology, and the natural environment, will require a transportation system that is developed with these factors in mind.[2]

[1] http://www.vtrans.org/vtrans2040.asp
[2] Ibid.

1.1.2 Virginia State Freight Plan

Virginia's State Freight Plan (the Freight Plan) was completed as an update to VTrans2035, the previous Virginia Statewide Transportation Plan. The Freight Plan describes the Commonwealth's strategy to improve goods movement on its highway, rail, waterborne, and aviation systems, underscoring the critical importance of efficient freight movement to the Commonwealth's economy as well as the interstate commerce moving over Virginia's transportation system.[3]

1.1.3 Virginia's Statewide Transportation Improvement Program

The Virginia Statewide Transportation Improvement Program (STIP) is a federally-mandated program that identifies all of the various transportation projects (highway, passenger rail, freight, public transit, bicycle, and pedestrian) that will utilize federal transportation funding or require approval from either the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), or FRA.[4]

The STIP is a combination of Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP) urban area projects and rural area projects that are prioritized with the consent of rural locality boards of supervisors and/or planning staff.[5] Projects funded under the Federal Lands Access Program are also included, along with those projects to improve roadways in Virginia's National Parks, National Forests, and Indian Reservations.[6] Federal regulation requires that the STIP demonstrate fiscal constraint to show that the state is not scheduling more transportation projects for construction than it has funding available.[7] Although state funded rail projects sometimes appear in the STIP, their inclusion is not required.

Owing to the fact that the STIP only tracks projects in Virginia that use federal funds, the Virginia Department of Transportation (VDOT) and DRPT develop separate Six-Year Improvement Programs (SYIPs) to comprehensively track all projects and funding sources. VDOT's SYIP is a state transportation planning document that includes projects on the interstate, primary, secondary, and urban highway systems, as well as some transit and rail projects, including those with FRA funding. DRPT's SYIP includes six years of transit and rail capital improvement projects, as well as one year of transit operation and special projects.[8]

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[3] http://www.vtrans.org/plans.asp#Freight
[4] http://www.virginiadot.org/about/stip.asp
[5] Ibid.
[6] http://www.virginiadot.org/VDOT/About_VDOT/asset_upload_file203_76773.pdf
[7] Ibid.
[8] Ibid.

DRPT's funding objectives are shaped to maintain a globally competitive and attractive climate for people and businesses, and to ensure that Virginia's transportation system contributes to a productive and efficient economy. As such, rail projects on the SYIP are chosen for their alignment with these guiding principles.

1.2 Rail Transportation's Role within the Virginia Transportation System

From the opening of the first railroad in the Commonwealth 185 years ago to the present day, Virginia's rail network has proven to be a major contributor to the development and economic success of the Commonwealth and nation as a whole.

1.2.1 Virginia's Freight Railroads

Virginia's current major freight rail carriers are the result of the consolidation of several smaller predecessor rail lines. These carriers have strong national and international networks with comprehensive multimodal connectivity. Virginia's major freight rail carriers (or Class I railroads) include:

- CSX Transportation (CSX)
- Norfolk Southern Railway (NS)

In addition to the two major Class I carriers, there are nine shortline (or Class III) railroads in Virginia that also serve as local railroads[9]. No regional carriers (or Class II railroads) operate in Virginia. These shortline railroads provide freight rail service to Virginia at the regional and local level. Virginia's shortline railroads include:

- Bay Coast Railroad (BCR)
- Buckingham Branch Railroad (BB)
- Chesapeake & Albemarle Railroad (CA)
- Chesapeake Western Railway (CHW)
- Commonwealth Railway (CWRY)
- Norfolk & Portsmouth Belt Line Railroad (NPB)

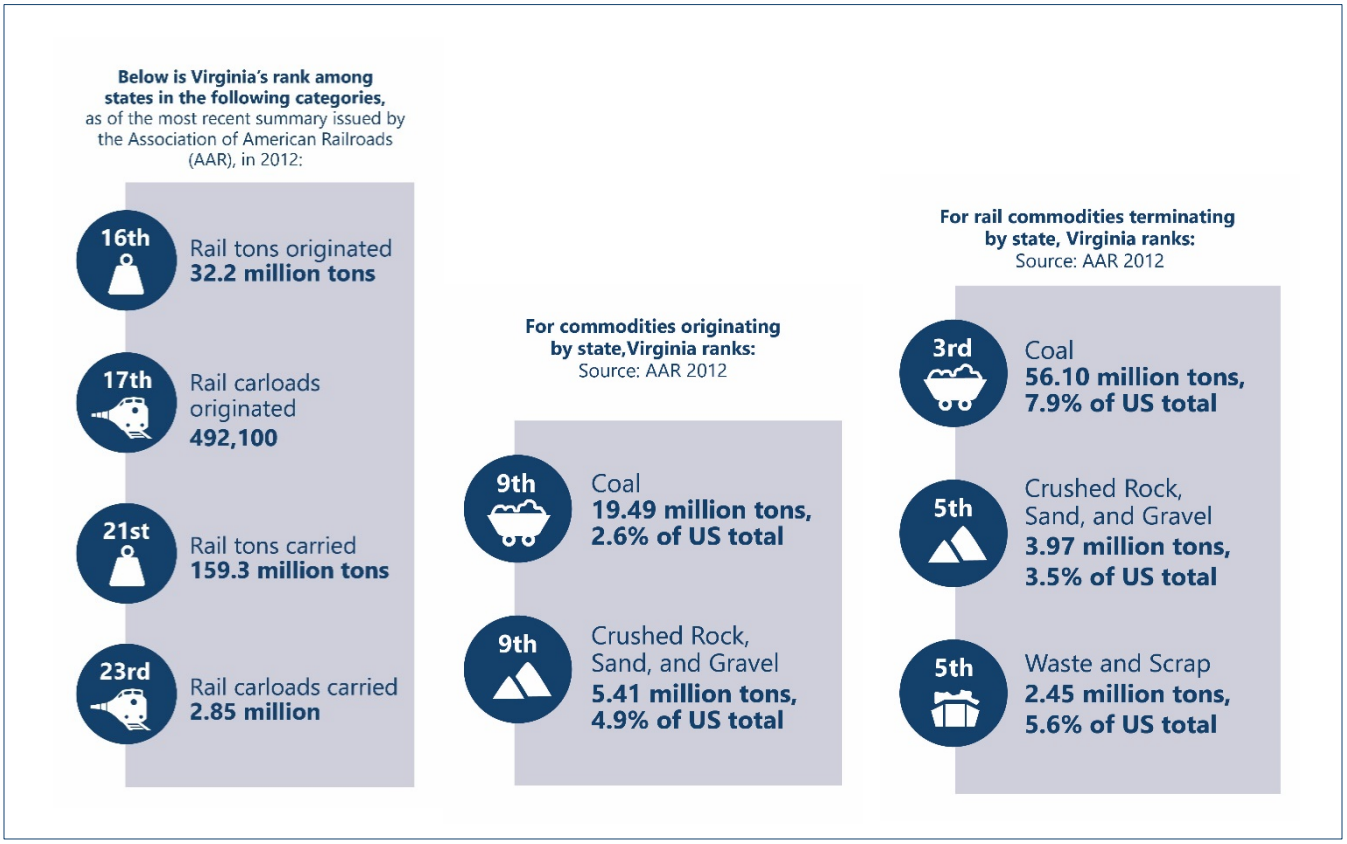
[9] A Class III railroad is defined by the Surface Transportation Board as a railroad that has annual operating revenues of less than $250 million (in 1991 dollars). Local railroads are defined by the Association of American Railroads as either line-haul carriers or switching and terminal carriers that are neither Class I or regional railroads. For purposes of the State Rail Plan, Class III and local railroads are referred to as shortline railroads in this document.

- North Carolina & Virginia Railroad (NCVA)
- Shenandoah Valley Railroad (SV)
- Winchester & Western Railroad (WW)

Today, the rail system in Virginia plays an essential freight transportation role both within the state and nationally. Virginia's location and position on principal rail corridors provides rail access to every region of the U.S., as well as ports along the entire Atlantic coast.

Figure 1-1 shows Virginia's rank among states in multiple categories, as of the most recent summary issued by the Association of American Railroads (AAR), in 2012[10]. Of note, Virginia ranks within the top 10 for multiple commodities both originating and terminating in the state:

Figure 1-1: Virginia's Rank



[10] AAR, State Rankings, 2012.

1.2.2 Virginia's Passenger Rail Services

Intercity passenger rail service in Virginia is provided by Amtrak. These services consist of:

- Virginia regional service through Amtrak's Northeast Regional trains on four routes from Washington, D.C. to Richmond, Norfolk, Newport News, Lynchburg, and Roanoke;
- Interstate corridor and long-distance trains that operate through Virginia on routes linking New York with Miami, Savannah, Charlotte, New Orleans, and Chicago; and
- The long-distance Auto Train operating between Lorton, Virginia and Sanford, Florida.

Commuter rail service in Virginia is provided by Virginia Railway Express (VRE) on two routes from Washington, D.C. to Broad Run (the Manassas Line) and Spotsylvania (the Fredericksburg Line). Connections between passenger and commuter rail services and local rail transit systems can be made in Alexandria, Franconia-Springfield, and Crystal City with Washington, D.C.'s Metrorail, and at Norfolk with The Tide light rail service. As metropolitan areas in Virginia continue to grow, the need to invest in a diverse network of passenger transportation options that will accommodate this population growth has been recognized.

1.3 Institutional Structure of Virginia's State Rail Program

1.3.1 Commonwealth Transportation Board – Policy

Virginia's CTB establishes the administrative policies for the Commonwealth's transportation system.[11] CTB members are appointed by the governor; each represents a district with the exception of four at-large members. The CTB allocates transportation funding to specific projects, locates routes, and provides funding for highways, rail, and public transportation projects. The CTB Rail Committee, a subgroup of the CTB, meets separately and works with DRPT staff on policies, procedures, special projects, and reports related to rail.

The SYIP is produced annually and contains six years of projects; however, the CTB only allocates funding for the first fiscal year of the SYIP. The other five fiscal years are estimations for future allocations.[12] As revenue estimates are updated, priorities are revised, and project schedules and costs change, the CTB makes annual adjustments to the SYIP projects accordingly.

[11] http://www.ctb.virginia.gov/
[12] http://www.virginiadot.org/projects/syp-default.asp

1.3.2 Transportation Secretariat – Executive

Office of Intermodal Planning and Investment

The purpose of the OIPI of the Secretary of Transportation is to provide solutions that link existing transportation systems; promote the coordination of transportation investments and land use planning; reduce congestion; improve safety, mobility, and accessibility; and provide for greater travel options.[13] The director of OIPI advises the Virginia Secretary of Transportation, the Virginia Aviation Board, the Virginia Port Authority Board, and the CTB on intermodal issues.[14]

Virginia Department of Rail and Public Transportation

DRPT is responsible for administering grant funding for intercity passenger rail, freight rail and transit services in the state, and coordinating overall state rail and public transportation improvement strategies. The Department is also responsible for rail planning and project development activities, including development of this State Rail Plan.

States must establish or designate a State Rail Transportation Authority to develop state rail plans that set policy involving freight and passenger (intercity and commuter) rail transportation within their boundaries, establish priorities and implementation strategies to enhance rail service in the public interest, and serve as the basis for Federal and State rail investments within the state. DRPT is Virginia's State Rail Transportation Authority (SRTA) and State Rail Plan Approval Authority (SRPAA). Furthermore, Virginia complies with the requirements of 49 U.S.C. §22102, which stipulates eligibility requirements for long-established FRA rail freight grant assistance programs pertaining to state planning and administration.

DRPT has no rail regulatory authority. It participates in the railroad abandonment process and offers comment on federal rail legislation and rulemaking; however, the Virginia State Corporation Commission's (SCC) Division of Utility and Railroad Safety, in conjunction with the FRA, is responsible for enforcing state and federal statutes related to railroads.[15]

DRPT's rail grant funding provides access and improvements to Virginia's railways to encourage economic development and reduce traffic on Virginia's highways. Specifically, funding focuses on capacity projects at the Port of Virginia, passenger rail service improvements, mainline freight capacity improvements, shortline infrastructure upgrades, and improving rail access industrial businesses along

[13] http://vtrans.org/about_us.asp#what_we_do
[14] Ibid.
[15] http://www.scc.virginia.gov/comm/cent.pdf

existing rail lines. In addition, DRPT completes an annual SYIP for rail and transit projects. The SYIP is the means by which the CTB meets its statutory obligation under the Code of Virginia to allocate funds to interstate, primary, secondary, and urban highway systems, public transit, ports, airports, rail, and other programs for the immediate fiscal year and five succeeding fiscal years.[16]

DRPT's Rail Division

DRPT's Rail Division has the responsibility to administer rail grants (including administering passenger rail operating grants) and to conduct rail planning activities. Below is a list of DRPT Rail Division responsibilities:

- Rail policy and legislation development[17]
- Development of the DRPT SYIP for freight and passenger rail projects
- Advocacy and communications for promoting transportation options[18]
- Administration of Rail Grants[19]
  - Rail Industrial Access Fund
  - Shortline Railway Preservation and Development Fund
  - Rail Enhancement Fund
  - Intercity Passenger Rail Operating and Capital Fund
- Project oversight – design and construction
- Passenger rail, freight rail, and public transportation planning[20]
- Coordination with Amtrak, CSX, NS, shortline railroads, VRE, other states, local MPOs, and agencies on Virginia regional service passenger rail operations, planning, and railroad infrastructure development

Virginia Department of Transportation

DRPT serves as the lead agency for rail and public transportation, administering funds for rail investments and public transportation agency formula funds. However, VDOT administers the federal highway-rail crossing safety program and serves as the lead agency for highway transportation. The rail crossing safety program provides safety analysis, project selection, and project funding and implementation of grade crossing improvements and closings. These funds are administered through VDOT's Engineering Division as part of the Virginia Highway Safety Improvement Program.

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[16] Ibid.
[17] http://www.drpt.virginia.gov/about-us/legislative-updates/
[18] http://www.drpt.virginia.gov/about-us/core-mission/
[19] http://www.drpt.virginia.gov/grantees/rail-grants/
[20] http://www.drpt.virginia.gov/about-us/background/

In partnership with DRPT, VDOT oversees its own SYIP that outlines planned spending for transportation projects proposed for construction development or study over a six-year cycle.[21]

VDOT Right of Way and Utilities Division

The Right of Way and Utilities Division has a role in the Commonwealth's acquisition of right-of-way (ROW) needed for the implementation of new intercity passenger rail services sponsored by the Commonwealth of Virginia. The office has eight sections related to ROW design and acquisition for state transportation projects. [22] The Right of Way and Utilities Division also has a Rail Section for the coordination of railroad activities, right of entry agreements, grade crossing agreements, and other projects requiring agreements with railroads, while also providing timely guidance and direction to VDOT staff/consultants statewide.[23]

VDOT Office of Public-Private Partnerships

VDOT houses the Office of Public-Private Partnerships and works with DRPT and the CTB to develop Virginia's Public-Private Transportation Act of 1995 (PPTA) manual and guidelines. These guidelines are based on the Code of Virginia § 33.2-1801 which provides the policy of the General Assembly regarding the PPTA.[24] The PPTA, as amended, is the legislative framework enabling the Commonwealth of Virginia, local governments, and certain other public entities as defined in the PPTA to enter into agreements authorizing private entities to develop or operate qualifying transportation facilities. More information, including Virginia's current and completed projects, can be found at http://www.p3virginia.org/.

Virginia's Port Authority

The Virginia Port Authority reports to the Virginia Secretary of Transportation and owns the Port of Virginia. The Port Authority fosters and stimulates the growth for Virginia's economy by serving as the global gateway for the import and export of freight, improving navigable waters within the Commonwealth of Virginia, and by aiding in the development of commerce for all of Virginia's maritime and inland ports.[25]

The Port of Virginia is the fifth largest container port in the nation, moving more than 2.3 million twenty-foot equivalent units (TEUs) of cargo through its terminals every year. The Port, shown in **Figure**

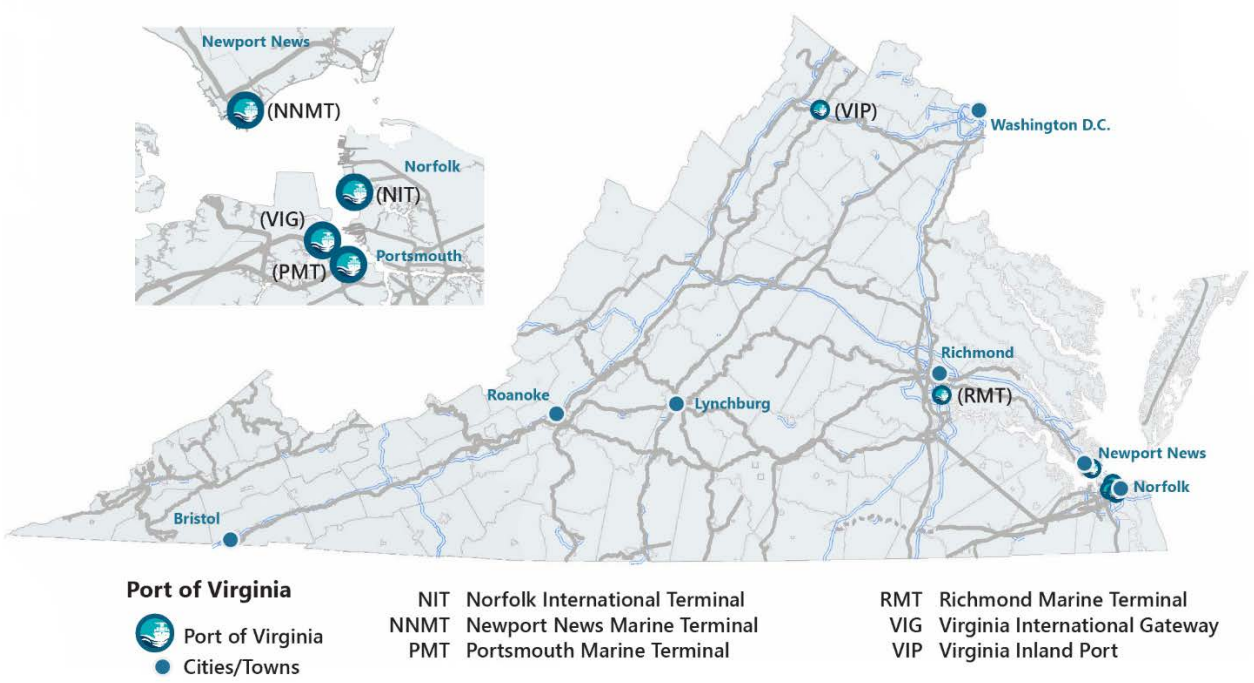
[21] Ibid.
[22] http://www.virginiadot.org/business/row-default.asp
[23] Ibid.
[24] http://law.lis.virginia.gov/vacode/title33.2/chapter18/section33.2-1801/
[25] http://www.portofvirginia.com/wp-content/uploads/2016/02/TPOV-master-plan-2065-final-020316.pdf

1-2, is made of up of four deep-water marine terminals, an upriver terminal, and an inland intermodal terminal[26]:

- Norfolk International Terminals (NIT)
- Newport News Marine Terminal (NNMT)
- Virginia International Gateway (VIG)
- Portsmouth Marine Terminal (PMT)
- Richmond Marine Terminal (RMT)
- Virginia Inland Port (VIP)

Two Class I railroads, CSX and NS, serve the Port of Virginia via on-dock intermodal container transfer facilities at Virginia International Gateway and Norfolk International Terminals.[27] The service offered by the Class I railroads is augmented by vital shortline rail partners including the Norfolk & Portsmouth Belt Line Railroad and the Commonwealth Railway.[28]

Figure 1-2: Map of the Port of Virginia



[26] Ibid.
[27] http://www.portofvirginia.com/about/
[28] Ibid.

1.3.3 Other State Agencies or Initiatives Related to Rail

State Corporation Commission: Division of Utility and Railroad Safety

The SCC Division of Utility and Railroad Safety oversees the safety programs involving underground utility damage prevention, jurisdictional natural gas and hazardous liquid pipeline facilities, and railroads.[29] The SCC Division of Utility and Railroad Safety and the FRA cooperatively conduct inspections of railroad facilities including track and equipment to ensure safe operation of jurisdictional railroads within Virginia.[30] A more detailed description of the SCC and their role in railroad safety regulation is located in **Chapter 2**.

Virginia Economic Development Partnership

In 1995, the Virginia General Assembly created the Virginia Economic Development Partnership (VEDP) to better serve those seeking a prime business location and increased trade opportunities and thereby foster increased expansion of the Commonwealth's economy.[31]

VEDP focuses on cultivating new business investment, fostering international trade growth, and encouraging the expansion of existing Virginia businesses.[32] When VEDP identifies new or expanding industries that have needs related to the railroad network, DRPT staff work with VEDP and the client on railroad grant applications to construct capacity improvements or refurbish existing railroad infrastructure.

1.3.4 Regional and Local Organizations

In addition to DRPT and VDOT, Virginia's transportation agencies include Metropolitan Planning Organizations (MPO) and Planning District Commissions/Regional Councils (PDC/RC).

1.3.4.1 Metropolitan Planning Organizations

MPOs are federally mandated and funded transportation policy-making organizations comprised of local government and transportation officials. The formation of an MPO is required for any urbanized area with a population greater than 50,000.

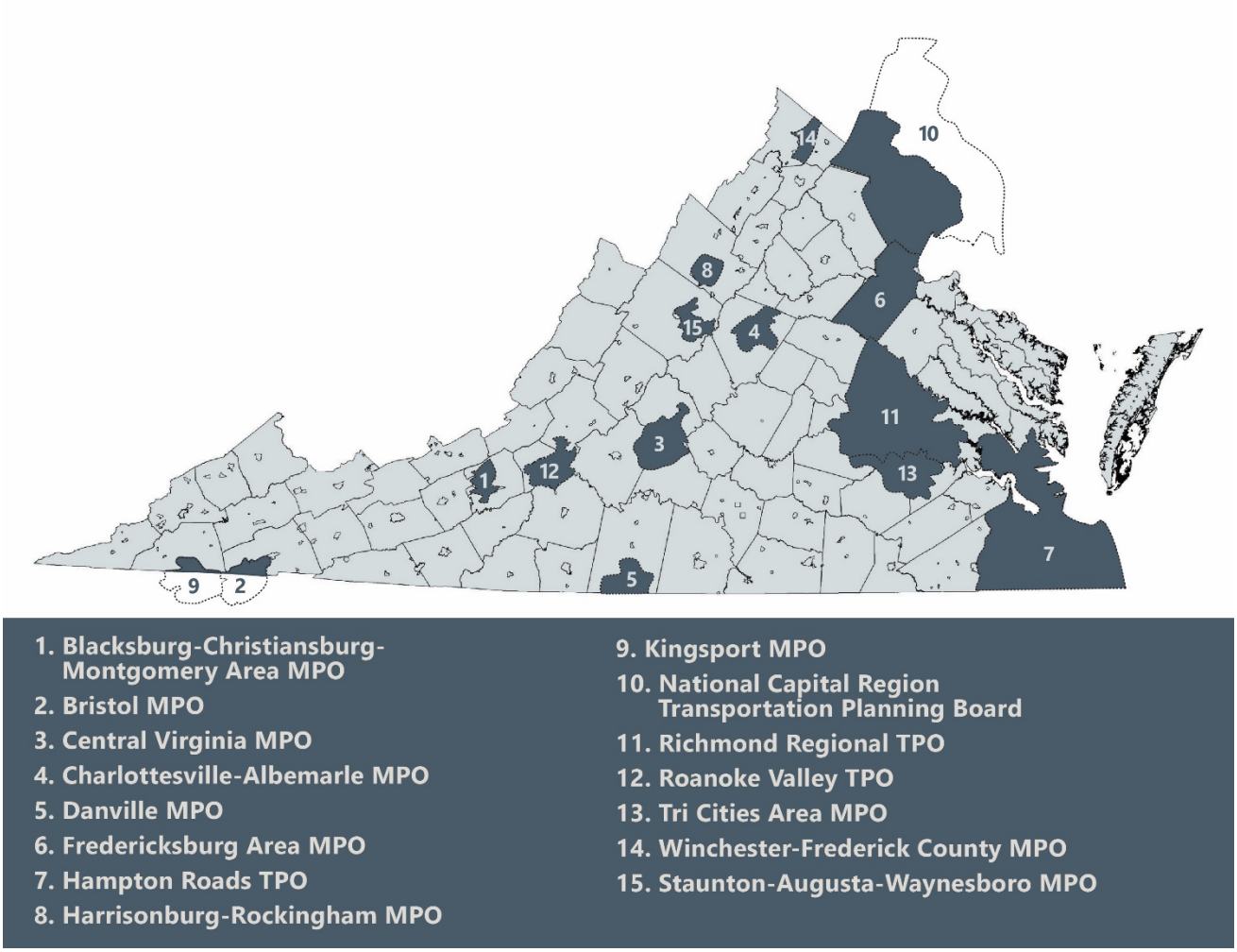
MPOs are required to maintain and continually update a Long-Range Transportation Plan (LRTP) as well as a Transportation Improvement Program (TIP), which is a multi-year program of transportation

[29] https://www.scc.virginia.gov/urs/index.aspx
[30] Ibid.
[31] http://www.yesvirginia.org/AboutUs
[32] Ibid.

projects to be funded with federal and other transportation funding sources. As MPO planning activities have evolved to address the movement of freight as well as passengers, they have included consideration of multimodal solutions, improved intermodal connections, and more specific rail and rail-related project solutions. DRPT transit and rail division staff work with MPOs and PDCs - attending various meetings and workshops - to ensure transit, demand management, and rail strategies and projects are included in regional transportation plans.

The 15 MPOs are shown in **Figure 1-3**.

Figure 1-3: Map of Virginia MPOs

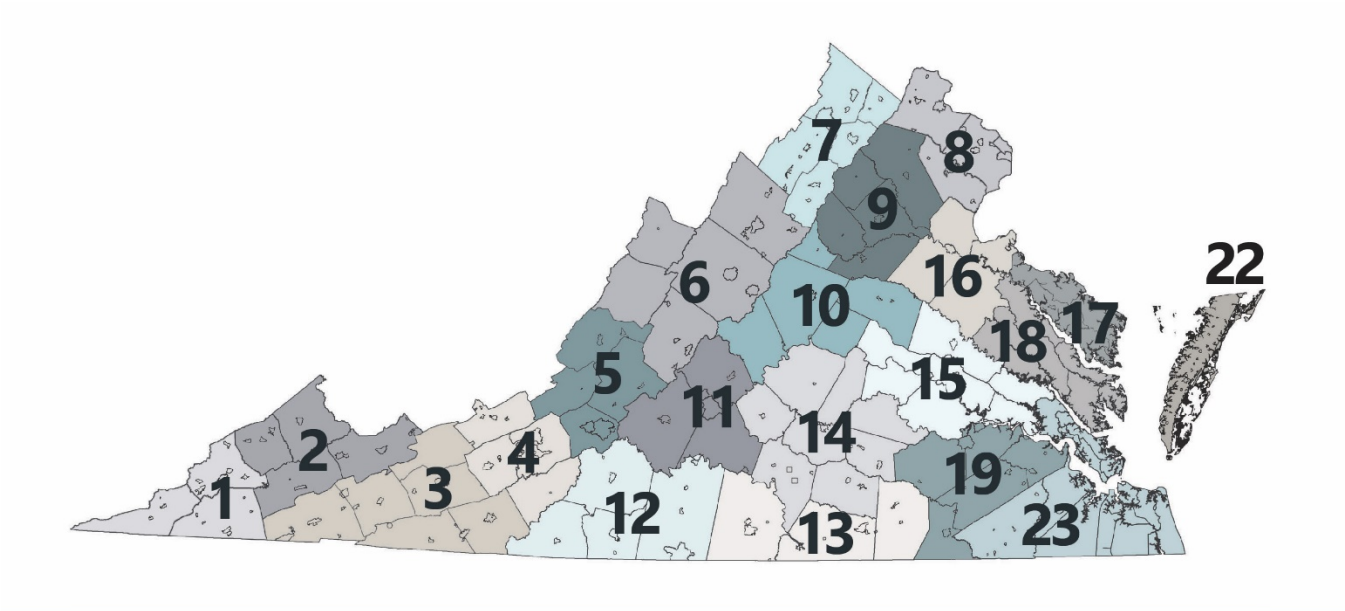


Source: Virginia Association of Metropolitan Planning Organizations, 2016 and HDR

1.3.4.2 Planning District Commissions and Regional Councils

PDC/RCs are responsible for addressing transportation and related issues in regions of Virginia outside the metropolitan areas represented by MPOs. Strategic, land use, and transportation planning are services that Virginia PDC/RCs provide, in relation to rail.[33] Virginia has 21 PDC/RCs, which are shown in **Figure 1-4**.[34]

Figure 1-4: Virginia Planning District Commissions



Source: Virginia Association of Planning District Commissions and HDR

[33] http://www.vapdc.org/?page=6
[34] http://www.vapdc.org/?page=10

1.3.4.3 Local and Regional Economic Development Agencies

Virginia has a number of local public and private economic development agencies that recruit industries and businesses based on their location, available labor force, room for growth, and access to rail and other transportation assets.

The *Virginia Directory of Economic Development Organizations* lists 73 entities around the state, including economic development agencies and authorities, chambers of commerce, alliances, development councils, corporations, associations, and marketing coalitions at the regional, county, or local level of government.[35] Many of these agencies offer incentives such as tax exemptions and credits and other means of assistance to attract business interests. Although these agencies do not generally work directly with freight railroad operators, they do have a vested interest in the level of rail services and rail assistance programs available to supplement their incentives.

1.3.5 Multi-State Cooperatives

1.3.5.1 I-81 Corridor Coalition

Virginia participates in the Interstate 81 (I-81) Corridor Coalition, a multistate initiative to improve the safety and efficiency of freight and passenger movement along the I-81 corridor. The mission of the coalition is to coordinate decision making, management, and operations of I-81 through the sharing of information.

1.3.5.2 I-95 Corridor Coalition

The Interstate 95 (I-95) Corridor Coalition is a partnership of transportation agencies, toll authorities, public safety, and related organizations, from the State of Maine to the State of Florida, including Virginia participation. In 1993, the Coalition was formally established to enhance transportation mobility, safety, and efficiency along I-95; with a specific focus on studying and testing intelligent transportation systems (ITS) technologies. In more recent years, the Coalition's perspective evolved from a concentration on highways to one that encompasses all modes of travel and focuses on the efficient transfer of people and goods between modes.

1.3.5.3 Virginia-North Carolina High Speed Rail Compact

Virginia and North Carolina have established the only bi-state, high-speed rail partnership in America, the Virginia-North Carolina High Speed Rail Compact, which was authorized by Congress and established through legislation enacted by the Virginia and North Carolina General Assemblies. The

[35] http://www.gdi-solutions.com/directory/edo/virginia.htm

purpose of the Compact is to examine and discuss strategies to advance multi-state high-speed rail initiatives.

1.3.5.4 Southeast Rail Coalition

In 2002, FRA designated ten high speed corridors under Section 101-0 of the Intermodal Surface Transportation Act of 1991 (ISTEA) and Section 11-03(c) of the Transportation Efficiency Act for the 21st Century (TEA-21) for passenger rail service in high population density and congested intercity sections of the nation. Currently, Virginia is included in the Southeast Rail Coalition to discuss, share information and further development of the rail corridors designated in the southeast. Virginia joins a coalition of states in the southeast, including North Carolina, South Carolina, Georgia, and Florida.

1.4 Virginia's Authority to Conduct Rail Planning and Investment

1.4.1 State Authority for Rail Planning

The Virginia Code, Title 33.2 (Transportation) Subtitle I, Chapter 2, Section 285 assigns powers to DRPT to plan and implement transportation system improvements. DRPT's rail-related responsibilities per the Virginia Code are detailed in Virginia Code § 33.2-285[36].

1.4.2 State Authority for Grant, Loan, and Other Rail Financing

The Virginia Code, Title 33.2 (Transportation) Subtitle III, Chapter 16, Sections 1600 through 1604 establish methods for state rail funding in Virginia. Four types of funds have been codified:

- Rail Industrial Access Grants (§ 33.2-1600)
- Rail Enhancement Fund (REF) (§ 33.2-1601)
- Shortline Railway Preservation and Development Fund (§ 33.2-1602)
- Intercity Passenger Rail Operating and Capital (IPROC) Fund (§ 33.2-1603)

In addition, Virginia provides funding through various sources for commuter rail projects and public-private transportation projects. A brief overview of these funds will be discussed in more detail in the following chapters. Sources of federal funding are described in detail in **Chapter 2** of the Virginia State Rail Plan.

Rail Industrial Access Grants

The Rail Industrial Access Grants fund the construction of industrial access railroad tracks through the Transportation Trust Fund (TTF), pending approval by the CTB.[37] The TTF is created by Virginia's tax

[36] http://law.lis.virginia.gov/vacode/title33.2/chapter2/section33.2-285/

base; its revenues are the major source of transportation funding within the Commonwealth. The Rail Industrial Access Fund promotes truck diversion by providing grant assistance to connect new or expanding businesses to the freight railroad network.[38] The program supports localities, businesses, or industries seeking access to a common carrier railroad. Applications are accepted throughout the year.[39]

Rail Enhancement Fund

Created by the General Assembly in 2005, the REF provides for the retention, maintenance, improvement, and development of freight and passenger railways, which are essential to the Commonwealth's continued economic growth, vitality, and competitiveness in national and world markets.[40]

Projects undertaken using these funds must create public benefits within the Commonwealth that exceed the investment from the fund.[41] Such benefits include the improvement of traffic congestion and environmental quality, and reduction in highway maintenance needs.[42] This fund is the primary source for the implementation of large capital projects for rail improvements, and all projects receiving funds from the REF must include a minimum of 30 percent cash or "in-kind" matching contribution from a non-state source, that may include a private source, a railroad, a regional authority, a local government source, or a combination of such sources.[43]

Shortline Railway Preservation and Development Fund

The Shortline Railway Preservation and Development Fund (§33.2-1602) is a non-reverting fund for the preservation and continuation of existing rail service to increase productivity, safety, and efficiency of shortline railroad transportation in Virginia; created in 1992 and codified in 2006.[44] As of 2015, the Shortline Railway Preservation and Development Fund has allocated $3 million annually for shortline rail

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[37] http://www.ctb.virginia.gov/resources/2015/May/pres/Presentation_Agenda_Item_7.pdf
[38] http://www.drpt.virginia.gov/grantees/rail-grants/
[39] Ibid.
[40] http://law.lis.virginia.gov/vacode/title33.2/chapter16/section33.2-1601/
[41] Ibid.
[42] Ibid.
[43] Ibid.
[44] http://law.lis.virginia.gov/vacode/title33.2/chapter16/section33.2-1602/

improvement projects. These funds are administered by DRPT and are subject to the approval of the CTB.[45]

The Shortline Railway Preservation and Development Fund assists operations for Virginia's shortline railroads.[46,47] The Shortline Railway Preservation Development Fund referred to as the Rail Preservation Program assists in the operations for Virginia's shortline railroads. The Rail Preservation Program supported 18 projects for Virginia's shortline railroads in FY 2016.[48] These Rail Preservation projects consist primarily of bridge and track upgrades, signal system upgrades, yard improvements, siding enhancements, and tie and rail replacement, as well as the related ballast, tamping, and surfacing of existing rail lines operated by the shortline railroads in Virginia. These projects are funded through the annual TTF allocation and related interest revenues, and the Transportation Capital Projects Revenue (CPR) bonds.[49]

Intercity Passenger Rail Operating and Capital Fund

The IPROC Fund was created by the General Assembly in 2011 as a strategy to sustain Virginia's share of Amtrak Virginia's operating budget, pursuant to PRIIA guidelines, and can be found in Virginia Code § 33.2-1602.[50] The IPROC fund is used to fund four state-supported Amtrak routes, consisting of six Virginia regional service Amtrak trains. The PRIIA Act of 2008 required states with Amtrak services less than 750 miles to pay for the routes or cease operation, and the IPROC fund enables the Commonwealth to continue those services.[51] The IPROC fund is also the source of funds for passenger rail equipment upgrades and capital improvements.[52]

Commuter Rail Funding

VRE is currently the only agency that provides commuter rail service in the Commonwealth. Funding for commuter rail service is supported by federal and state transportation funds, along with local matching funds. Portions of the federal operating funds for VRE are managed through the transit side of DRPT. Because VRE is considered a commuter rail service, which is a transit function, federal funding is

[45] http://www.ctb.virginia.gov/resources/2015/dec/reso/attach/Resolution10_Attachment_A_Rail_Policy.pdf
[46] Ibid.
[47] http://www.drpt.virginia.gov/media/1640/2014-2016-strategic-plan-2015-06-17-final-va-performs.pdf
[48] http://www.drpt.virginia.gov/media/1637/fy-2016-drpt-agency-budget-final-final.pdf
[49] http://www.ctb.virginia.gov/resources/2015/May/pres/Presentation_Agenda_Item_7.pdf
[50] http://law.lis.virginia.gov/vacode/title33.2/chapter16/section33.2-1603/
[51] http://www.drpt.virginia.gov/grantees/rail-grants/
[52] Ibid.

managed by the FTA. Additionally, DRPT provides capital funding for projects that benefit VRE through the Rail Division's REF grants.

1.4.3 State's Past Funding of Rail Programs and Projects

Virginia has made significant advancements in recent years in providing dedicated funding for rail investments. DRPT's existing funding programs provide a strong foundation for future funding aimed at further rail improvements. In the last five years, DRPT has invested nearly $140 million per year for rail improvements in Virginia[53]. Funding for DRPT's rail programs was supported through the following funding sources to support freight (including shortlines), port, industrial, and passenger rail programs and projects[54]:

- Federally-administered rail grants [i.e. American Recovery and Reinvestment Act (ARRA) fund];
- Rail Industrial Access grants;
- Rail Enhancement Fund;
- Shortline Railway Preservation and Development Fund;
- Intercity Passenger Rail Operating and Capital Fund;
- Transportation Capital Projects Revenue;
- Virginia Transportation Act of 2000 (VTA 2000) funds; and,
- Local match.

1.4.4 Corridors of Statewide Significance

Table 1-1 identifies the rail lines in Virginia that are part of the Corridors of Statewide Significance designated by the CTB. Corridors of Statewide Significance are defined as "an integrated, multimodal network of transportation facilities that connect major centers of activity within and through the Commonwealth and promote the movement of people and goods essential to the economic prosperity of the state." The components of these corridors are the facilities and services that comprise the multimodal network connecting each corridor's major centers of activity and accommodate intercity travel between those centers as well as interstate traffic. These components include highways, railroad lines, transit services, multimodal facilities, port facilities, and airports. According to Virginia's Office of Intermodal Planning and Investment, to be considered a Corridor of Statewide Significance, a corridor must meet all four of the following criteria:

- Multimodal - Must involve multiple modes of travel or must be an extended freight corridor.
- Connectivity - Must connect regions, states, and/or major activity centers.

[53] http://www.drpt.virginia.gov/finance-procurement/archives/
[54] Ibid.

- High Volume - Must involve a high volume of travel.
- Function - Must provide a unique statewide function and/or address statewide goals.

Corridors of Statewide Significance are intended to be a focus of statewide investment. The CTB envisioned that high priority multimodal projects within these corridors would be given increased consideration/prioritization over single-mode solutions in modal plans.

Table 1-1: Virginia Corridors of Statewide Significance

Corridor of Statewide Significance	Approximate Virginia Endpoints	Major Rail Service
Coastal Corridor (US 17)	Winchester-Fredericksburg-Hampton Roads	N/A
Crescent Corridor (I-81)	Winchester-Roanoke-Bristol	Freight Only NS Crescent Corridor
East-West Corridor (I-64)	Hampton Roads-Richmond-Clifton Forge	CSX Coal Network, Freight and Passenger Buckingham Branch Railroad, CSX James River and Peninsula Lines Amtrak Newport News Service
Eastern Shore Corridor (US 13)	New Church-Cape Charles-Hampton Roads-Branchville	Freight Bay Coast Railroad, CSX National Gateway
Heartland Corridor (US 460)	Hampton Roads-Lynchburg-Roanoke-Radford	Freight and Passenger NS Heartland Corridor Amtrak Norfolk Service and Amtrak Lynchburg service extension to Roanoke
North Carolina to West Virginia Corridor (US 220)	Monterey-Roanoke-Martinsville	Freight CSX Coal Network, NS Winston-Salem District
North-South Corridor (VA 234)	Leesburg-Manassas-Dumfries	N/A
Northern Virginia (I-66)	Arlington-Gainesville-Middletown	Freight and Passenger NS Crescent Corridor Amtrak Lynchburg service VRE Manassas Line
Seminole Corridor (US 29)	Arlington-Manassas-Lynchburg-Danville	Freight and Passenger NS Crescent Corridor Amtrak Lynchburg service and Amtrak Crescent trains VRE Manassas Line

Corridor of Statewide Significance	Approximate Virginia Endpoints	Major Rail Service
Southside Corridor (US 58)	Hampton Roads-Danville-Bristol-Hagans-Cumberland Gap	Freight CSX National Gateway, NS Franklin District, CSX Coal Network, NS coal branches
Washington to North Carolina Corridor (I-95)	Arlington-Richmond-Emporia	Freight and Passenger CSX I-95 corridor/National Gateway Amtrak Richmond, Newport News, Norfolk, and other long-distance services, VRE Fredericksburg Line
Western Mountain Corridor (I-77)	Wytheville-Lamsburg	N/A

1.5 Summary of Freight and Passenger Rail Services and Initiatives in Virginia

1.5.1 Existing Rail System

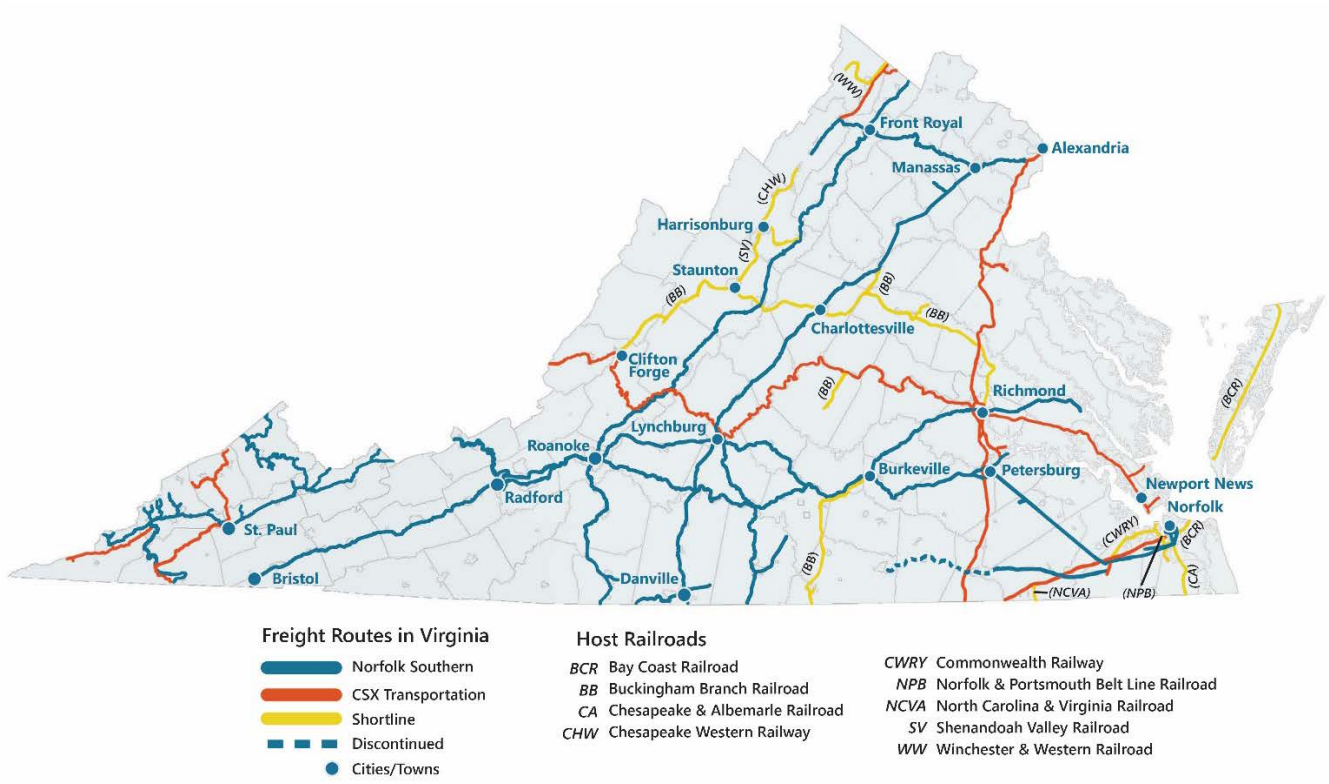
Virginia's Existing Freight Railroads

The rail system in Virginia is comprised of over 3,000 route miles owned and operated by freight railroads. CSX and NS own approximately 2,841 route miles, or 93.54 percent of the total rail mileage in the state. Shortline railroads own a total of approximately 196 route miles, or 6.46 percent of the total rail mileage in the state. Some shortline railroads also lease and operate track that is owned by Class I railroads in Virginia, most significantly 200 miles of CSX-owned lines between Richmond, Orange, and Clifton Forge that are leased and operated by the Buckingham Branch Railroad, with CSX retaining trackage rights. In 2012, the Commonwealth's freight railroads carried 151 million tons of freight[55], or approximately 2.1 million rail carloads of various commodities, to, from, within, and through Virginia.[56] The Commonwealth's freight railroads and their respective networks in Virginia are identified and described in detail in **Chapter 2** of the Virginia State Rail Plan.

A map of Virginia's freight railroad network appears in **Figure 1-5**.

[55] Six million tons of through freight in the Virginia 2012 TRANSEARCH database was removed as it could not be confirmed if that freight traveled through Virginia.
[56] Virginia 2012 TRANSEARCH database

Figure 1-5: Virginia Freight Railroad Network



Virginia's Existing Passenger Services

Amtrak operates 24 intercity passenger trains per day in Virginia.[57] This includes 12 Northeast Regional trains per day that operate on Amtrak's Northeast Corridor (NEC) between Boston and Washington, and continue south to serve stations in Virginia with four different services:

- Washington-Roanoke (Route 46)
- Washington-Newport News (Route 47)
- Washington-Norfolk (Route 50)
- Washington-Richmond (Route 51)

Amtrak also operates a daily roundtrip interstate corridor train (Carolinian) between New York and Charlotte that serves stations in Virginia, with operating support provided by the state of North Carolina. In addition, Amtrak operates the Auto Train and five long-distance passenger trains that make station stops in Virginia:

[57] The Cardinal long distance train operates only 3 days per week in each direction. On weekends, Amtrak operates fewer Northeast Regional trains between Richmond and the Northeast Corridor.

- Auto Train (daily between Lorton, Virginia and Sanford, Florida – no intermediate stops)
- Cardinal (three days per week in each direction between New York and Chicago)
- Crescent (daily between New York and New Orleans)
- Palmetto (daily between New York and Savannah)
- Silver Meteor (daily between New York and Miami)
- Silver Star (daily between New York and Miami)

Three freight railroads host Amtrak passenger trains in Virginia:

- CSX - Washington, D.C. through Richmond to Rocky Mount, North Carolina; Richmond to Newport News; and Clifton Forge to White Sulphur Springs, West Virginia
- NS - Alexandria to Greensboro, North Carolina, and Petersburg to Norfolk
- Buckingham Branch Railroad - Orange to Clifton Forge

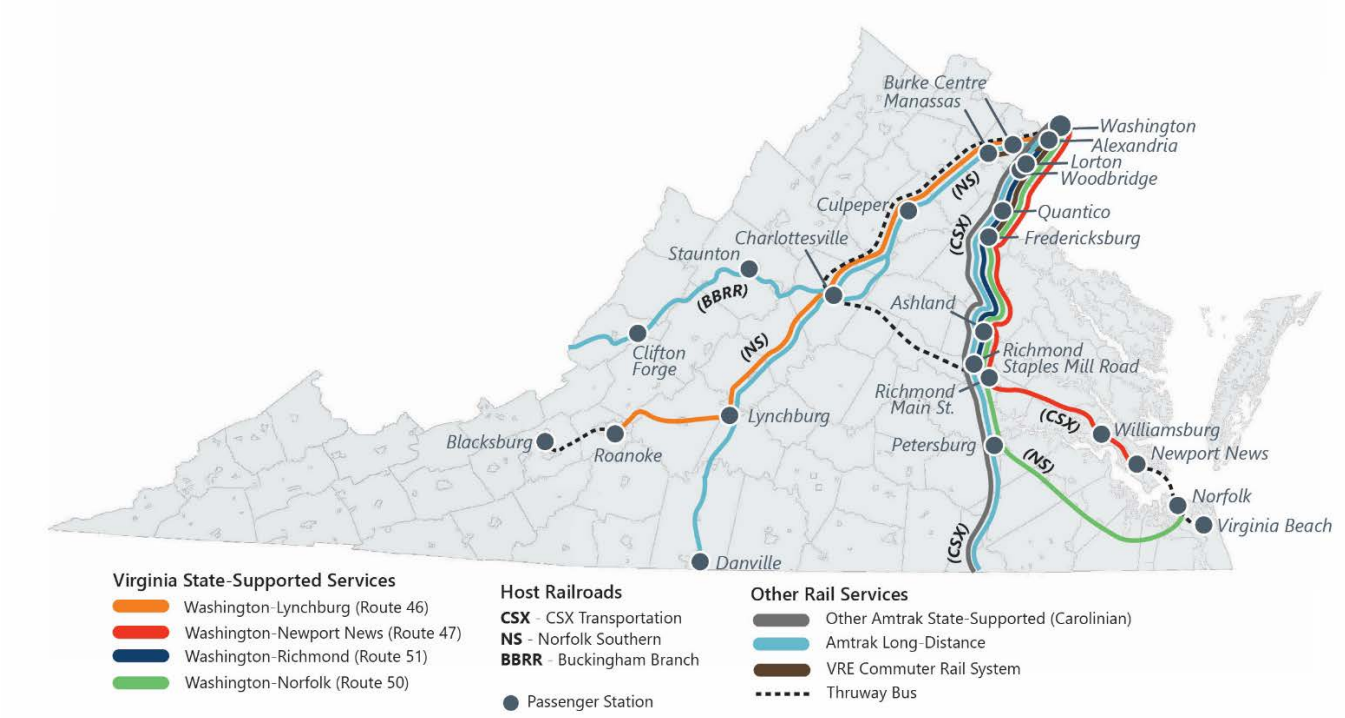
During Amtrak's FY 2015, 1,606,007 passengers boarded or alighted at the 20 Amtrak passenger rail stations located in Virginia. Fiscal year boardings and alightings at individual stations ranged from 6,735 (Staunton, served triweekly by the Cardinal) to 361,996 (Richmond's Staples Mill Road Station). In addition, Amtrak estimates that residents of Northern Virginia account for more than 1 million of the 5 million annual passengers that use Washington Union Station.[58]

VRE operates 32 revenue commuter trains each weekday, with 16 trains on the Manassas Line and 16 trains on the Fredericksburg Line. The commuter agency carries approximately 20,000 passengers per day and serves 17 rail stations in Virginia.[59]

Virginia's passenger routes are mapped in **Figure 1-6**.

[58] https://www.amtrak.com/ccurl/909/510/VIRGINIA15.pdf
[59] http://www.vre.org/about/

Figure 1-6: Passenger Routes in Virginia



Source: Amtrak and VRE

In addition to the Commonwealth's freight, intercity passenger, and commuter rail services, two groups in Virginia currently provide excursion train opportunities on a limited basis. The Virginia Museum of Transportation sponsors occasional train excursions powered by Norfolk & Western No. 611, a restored streamlined steam locomotive built at Roanoke in 1950 to haul passenger trains through Virginia. The locomotive is based in Roanoke, although the museum has sponsored excursions throughout the Commonwealth. The Old Dominion Chapter of the National Railway Historical Society, a nonprofit railroad history organization, owns its own passenger equipment and arranges seasonal train excursions departing from Dillwyn on the shortline Buckingham Branch Railroad.

Virginia's rail network, as well as its contributions and impacts on the state, are described in detail in **Chapter 2** of the Virginia State Rail Plan.

1.5.2 Virginia's Rail Industry Drivers

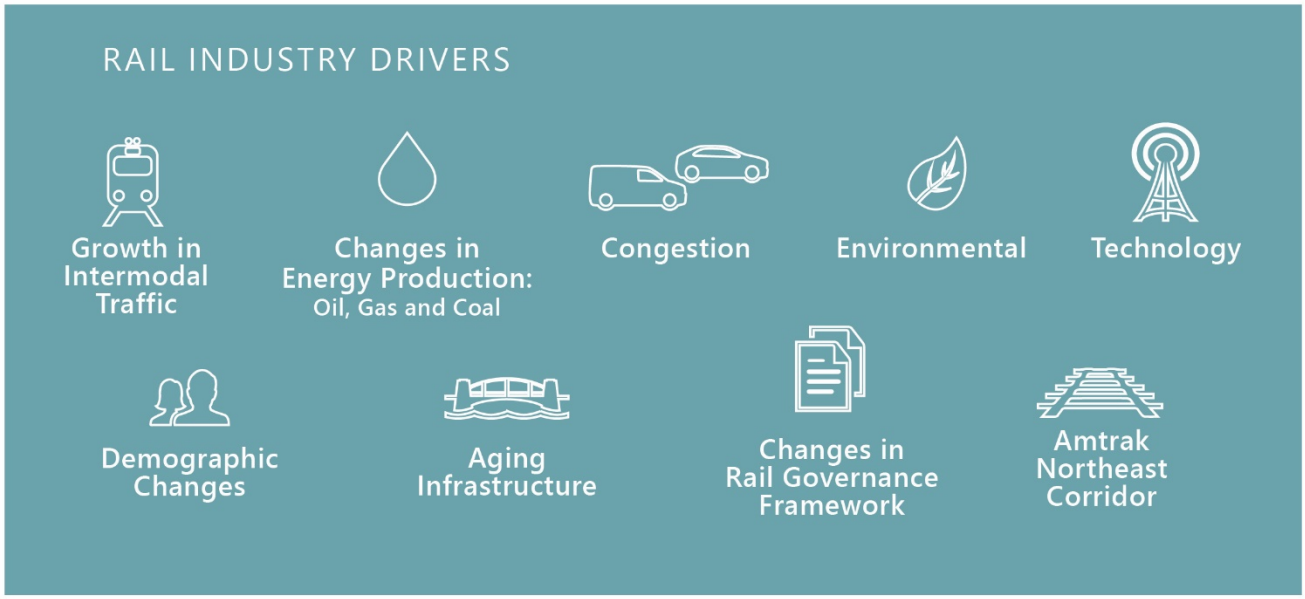
The State Rail Plan addresses changes in the rail industry and prioritizes Virginia's investments in freight and passenger rail services and infrastructure across the Commonwealth. This State Rail Plan guides Virginia's vision for railroad transportation to the horizon year of 2040, and lists strategies to achieve that vision. As described in **Chapter 2.1.3**, *Virginia's rail network is a valuable asset that drives the*

economy, reduces congestion, improves safety, and saves taxpayer money. Continued investment in rail infrastructure will ensure the mission and vision for the Commonwealth's transportation network is achieved.

In that regard, Virginia's investment in rail infrastructure must respond to the dominant rail industry drivers. Virginia's passenger and freight rail networks are affected by many external factors that drive demand for services. Freight rail corridors serving the Port of Virginia and the main north-south freight routes are experiencing growth in intermodal traffic, while changes in domestic energy production and use are reflected in a projected decrease in coal traffic. Population growth, an aging population, and increasing highway congestion along the "urban crescent" between Washington and Hampton Roads is helping drive demand for environmentally friendly and safe alternatives to automobile travel.

The Commonwealth invests in the rail network as part of a multimodal approach to meet the growing demand for freight and passenger transportation service and support the economic changes and travel preferences of Virginians. **Figure 1-7** depicts the primary drivers behind the projected changes to freight and passenger rail transportation in Virginia.

Figure 1-7: Rail Industry Drivers



1.5.2.1 Growth in Intermodal Traffic

The Port of Virginia has been the most important driver of intermodal rail traffic in Virginia. This trend will continue in the future with the increase in intermodal shipping traffic expected as a result of the

expansion of the Panama Canal. The Panama Canal Authority expanded the Panama Canal with a larger, third set of locks in 2016. The canal capacity for container vessels, previously limited to 4,500 Twenty-foot Equivalent Units (TEU) ships, has increased to container vessels of 12,500 TEU capacity. This expansion project created an opportunity for the ports in the eastern and southern U.S. to capture additional ocean trade with Asian and West Coast of South American countries – traffic that, until now, has bypassed Atlantic ports and traveled instead to ports on the West Coast before traveling to or from the eastern and southern U.S. by rail or truck. Within the U.S., fluctuating oil prices and changing regulations governing truck transportation have helped increase the competitiveness of rail transportation for the long-haul movement of truck trailers and shipping containers.

The Class I railroads are increasingly focused on growing their intermodal container business and investing in new or expanded facilities to attract more types of traffic. Intermodal transportation may involve carrying a truck trailer on a flatcar (TOFC) or a shipping container stacked one or two high on a specialized container well railcar or other flatcar (COFC). Within Virginia, there are currently three rail-truck intermodal container transfer facilities. Two are located in the Hampton Roads area, and handle a combination of domestic cargo and international trade to and from the State's Ports. In an effort to increase the competitiveness of the Port of Virginia, the Commonwealth has provided funding for improvements to NS and CSX rail lines linking the Port with consumer markets in the Midwestern U.S. that will allow railroads to operate trains carrying shipping containers stacked two-high in railcars, providing higher capacity and cost efficiency. Another facility, the Virginia Inland Port (VIP) in Front Royal, serves as an extension of the maritime terminals of the Port of Virginia in the Hampton Roads area. Additional details on projected Port growth can be found in **Chapter 2.2.2**.

1.5.2.2 Changes in Energy Production: Oil, Gas and Coal

The U.S. has seen tremendous growth in the domestic production of oil and gas through the application of hydraulic fracturing (fracking) and directional drilling within the last five years. Coal-fired electric power plants are becoming increasingly unable to compete with natural gas-fired plants. Retirements of coal-fired plants across the U.S. and in Virginia are increasing and accelerating. Virginia's Class I railroads have experienced a significant drop in domestic coal traffic, which has affected traffic volumes on routes such as CSX's Coal Corridor and NS's Heartland Corridor. Both rail lines also serve export coal piers in Newport News and Norfolk, and experience changes in rail traffic based on worldwide supply and demand. Additional details on projected commodity growth are in **Chapter 2.2.2**.

1.5.2.3 Congestion

Virginia's highways are heavily used for both local and long-distance travel. Population growth and economic development have caused significant increases in traffic volume in Northern Virginia, Hampton Roads, and Richmond, as well as in other parts of the state. Increased traffic volumes, coupled

with limited additional capacity, have caused congestion to spread along the state's major highway routes. The increased traffic on Virginia's major highways has made trip times by highway vehicle unreliable.

In addition, airline travel continues to grow, placing a strain on airport facilities that have not expanded to accommodate additional travelers. As a result, airline passengers have experienced frequent delays, while airlines have responded to the lack of airport capacity by reducing flights and increasing fares, which limits transportation options and generates detrimental economic effects such as lost productivity for travelers and excessive fuel consumption.

By diverting more freight and passenger traffic from road to rail, Virginia's railroad network relieves congestion, saves lives, improves air quality, and helps grow the economy, while reducing highway capital and maintenance expenditures. However, the types of traffic with the highest potential for shifting to rail from other modes, particularly rail passengers and commuters and intermodal freight, also have a high demand for on-time performance. Virginia's railroads are poised to play an even greater role in meeting future freight and passenger transportation demand, but only if investments are made that will enable both freight and passenger rail to provide consistently reliable service.

Currently, bottlenecks exist throughout Virginia's railroad network, which create network congestion and impact reliability. Rail bottlenecks exist in the Northern Virginia region, Crescent Corridor, East-West Corridor, Washington, D.C. to North Carolina Corridor, Richmond, Southside Corridor, and the North-South CSX lines and NS Heartland Corridor in the Tri-Cities region. Additional details on congestion in Virginia are in **Chapter 2.2.5** and **Chapter 2.2.6**.

1.5.2.4 Environmental

The VTrans2040 Vision document identifies the need to make infrastructure in Virginia more environmentally sustainable and resilient. An increase in climate volatility could create potentially significant rail transportation investment needs. Rising sea levels, from which Virginia's coastal areas are particularly at risk, will create increased flooding risk to the high concentration of rail infrastructure located in Hampton Roads and other low-lying coastal areas of the state. Potential severe heat and cold effects give rise to concerns about rail system maintenance and replacement costs for vulnerable rail infrastructure. For example, VTrans2040 lists bridge expansion defects, rail deformation, and tunnel flooding as effects on the rail system linked directly to an increase in climate volatility.

The VTrans2040 plan likewise lists reduction of transportation-related NO_X, VOC, PM, and CO emissions as a goal to promote local economies, and patterns of transportation that minimize vehicle travel. Additional details on environmental benefits of rail are in **Chapter 2.1.7**.

1.5.2.5 Demographic Changes

The VTrans2040 Vision document states that a majority of both younger and older citizens list affordable and convenient transportation alternatives to the car are at least somewhat important when deciding where to live. An aging population in rural areas of the state coupled with an increase in the population of young people in denser urban locales makes investments in transportation networks that provide alternatives to automobile travel a priority for the Commonwealth. In addition, widening economic inequality and increases in the cost of living in Northern Virginia as well as in other regions of the state necessitate a holistic view of transportation investments. Strong population growth in urban areas of the state means that Virginia's population is becoming more centralized, and more conducive to rail transportation as an attractive travel mode between congested urban areas. More details on trends in demographics are in **Chapter 2.2.1**.

1.5.2.6 Aging Infrastructure

In 1995, the Association of American Railroads adopted a new industry standard freight railcar that increased the maximum gross weight on rail (the weight of both the freight car and its contents) from 263,000 lbs. to 286,000 lbs. Since then, railroads have been making upgrades to their track structure, substructure, and bridges to accommodate these heavier cars. Railcars with a larger loading capacity provide greater operating efficiency for rail carriers and cost-efficiency for freight rail shippers. The ability of railroad lines to handle these increased car weights is of great importance to railroads, in order to increase operational efficiencies, as well as to railroad customers, which benefit from lower transportation costs, and local communities where those rail customers provide a base of employment and revenue. Railcars have not only grown in weight, but in size as well, with the most common examples being the introduction of railcars handling shipping containers stacked two high and tall railcars containing three levels of new automobiles for efficient transportation from assembly plants to car dealers. As a result, improving the clearances of rail lines to accommodate higher railcars has become another key industry initiative. NS recently completed an extensive project on its Heartland Corridor to raise tunnel heights to accommodate double-stacked intermodal containers. CSX is currently rebuilding the Virginia Avenue Tunnel in Washington, D.C. to add capacity and clearance for double-stacked intermodal trains. Virginia's railroad infrastructure, particularly rail customer sidings and lightly used secondary or branch lines may require costly upgrades to accommodate taller and heavier railcars or to maintain a state of good repair. Shortlines, too, require major infrastructure renewal and upgrades to maintain competitiveness with other shipping modes, allow for efficient interchanging with Class I railroads, and attract new sources of traffic. Additional details regarding aging infrastructure constraints are in **Chapter 4.2** for Class I railroads and **Chapter 4.3** for shortline railroads.

1.5.2.7 Changes in Rail Governance Framework

Recently there have been many changes at the state and federal level that affects the way Virginia manages its rail programs. The SEHSR program and PRIIA legislation created planning and project opportunities for improved passenger rail service and standards for cost allocation and service performance measurements for state-sponsored intercity passenger rail routes, respectively. In addition, PRIIA has opened up new questions about the role of states in the operation, maintenance, and promotion of passenger services they financially support. Virginia's legislative change allowing DRPT to purchase and own property has created opportunities to have the Commonwealth take a more involved position in long-term passenger rail planning and service delivery. Also significant is the ongoing coordination of the many multimodal transportation operations, both private and public, in Northern Virginia, that are needed to address transportation and mobility issues in that congested region of the state. Further details on the investment opportunities and potential long and short-term projects are in **Chapter 5**.

1.5.2.8 Amtrak Northeast Corridor

A major driving factor in providing and expanding passenger rail service in Virginia is the connection to Amtrak's NEC. Amtrak's NEC has the most robust passenger rail services in the U.S., serving the most densely populated urban areas in the country with intercity and long-distance passenger trains operated by Amtrak as well as commuter trains operate by regional transit agencies. Virginia's intercity passenger trains continue north of Washington, D.C. on Amtrak's NEC to New York and Boston. Although Virginia's passenger service benefits from the one-seat-ride opportunities provided to major cities in the Northeast, its service is simultaneously impacted by infrastructure constraints and congestion from passenger and commuter trains on the NEC. Additional information on the NEC is in **Chapter 3.3.1**.

1.5.2.9 Technology

The deployment of new technologies plays an important role in rail operations and safety. In recent years, Virginia railroads have focused on improving and installing new signals and Positive Train Control (PTC) systems to help improve operational efficiencies and safety. In particular, the effectiveness of PTC systems to automatically stop trains before certain accidents occur influenced the FRA to mandate the installation of PTC systems nationwide. Additionally, other technologies that allow for truck platooning and driverless trucks, may also impact rail market demand and customer expectations. Virginia and Virginia railroads must be prepared to deploy and take advantage of new technologies as they emerge.

1.5.3 Implementation of the Commonwealth's Vision

The State Rail Plan recognizes this vision and the drivers that facilitate the desired future outcomes through the establishment of goals and objectives, as outlined in **Chapter 2.1.3** and **Figure 2-7.** DRPT has considered various freight and passenger rail initiatives, and has studied the potential for optimizing the Commonwealth's freight rail network. Subsequently, DRPT has identified investments for the Commonwealth's rail infrastructure that will improve the capacity, efficiency, and safety of the Commonwealth's rail network, promote railroad access and economic development, and bolster connectivity with other transportation modes. The State Rail Plan outlines these investments and supporting demands for passenger and freight rail growth in each of the chapters:

Chapter 1 – Role of Rail in Statewide Transportation. Chapter one introduces you to the role and importance of rail in the Commonwealth's transportation network. From a farm-to-market transportation system to an evolving system supporting a thriving economy and the Port of Virginia, rail has helped Virginia grow and prosper.

Chapter 2 – Virginia's Existing Rail System. Chapter two provides an overview and inventory of Virginia's existing rail system and services, and identifies the economic, demographic, and transportation demand forecasts and trends that will affect future demand for passenger and freight rail service in the state.

Chapter 3 – Proposed Passenger Rail Improvements and Investments. This chapter introduces projects and initiatives that will help Virginia's passenger and commuter rail services to better serve the mobility needs of the state and region.

Chapter 4 – Proposed Freight Rail Improvements and Investments. The information in chapter four describes the recent improvements and investments that have been made and potential future investments by the state's freight railroads and the Commonwealth.

Chapter 5 – Virginia's Rail Service and Investment Plan. Chapter 5 prioritizes short and long range investments for the Commonwealth.

Chapter 6 – Public Involvement and Coordination. This chapter describes how the DRPT involved stakeholders in the coordination necessary to develop the rail plan.

VIRGINIA
STATEWIDE RAIL PLAN

CHAPTER 2

VIRGINIA'S EXISTING RAIL SYSTEM

December 6, 2017

CONTENTS

FIGURES

TABLES

2 Virginia's Existing Rail System

As a baseline for planning and decision making, this chapter provides an inventory of existing rail infrastructure and services, describes rail trends impacting the Commonwealth, and identifies the needs and opportunities for passenger and freight rail service.

2.1 Existing Virginia Rail System: Description and Inventory

2.1.1 Virginia's Existing Rail Network

Today's major rail carriers are the result of the consolidation of several smaller predecessor trunk lines that served the state over the last 150 years. Virginia is now served by eleven freight railroads, eight Amtrak intercity passenger routes, and two VRE commuter routes.

Virginia's rail system includes 3,037 miles of rail lines operated by the 11 freight railroads – two Class I railroads and nine shortline railroads. At present, Virginia does not have any non-operating railroads. The passenger rail system is comprised of Amtrak long-distance intercity services, intercity services through Amtrak, and VRE commuter rail services. These passenger services operate on rail lines owned by the freight rail companies under negotiated service agreements.

Table 2-1 shows the characteristics of the railroads in the Commonwealth.

Table 2-1: Virginia Route Mileage by Railroad and Non-Operating Railroad Owner

Railroad	Standard Carrier Alpha Code	Railroad Class / Type	Total Miles Owned in Virginia	Percent of Total Virginia Rail Network Owned	Miles Leased / Operated Under Contract	Miles Operated Under Trackage Rights[1]	Total Miles Operated in Virginia
CSX Transportation[(a)]	CSX	Class I	958	31.54%	7	256	1,051
Norfolk Southern Railway	NS	Class I	1,883	62.00%	0	107	1,990
Subtotal (Class I)			***2,841***	***93.54%***			
Bay Coast Railroad	BCR	Shortline	58	1.91%	5	5	68
Buckingham Branch Railroad	BB	Shortline	17	0.56%	258	9	284
Chesapeake & Albemarle Railroad[(b)]	CA	Shortline	0	0.00%	18	0	18
Chesapeake Western Railway[(c)]	CHW	Shortline	43	1.42%	0	0	43
Commonwealth Railway[(b)]	CWRY	Shortline	17	0.56%	0	0	17
Norfolk & Portsmouth Belt Line Railroad[(d)]	NPB	Shortline	11	0.36%	0	15	26
North Carolina & Virginia Railroad[(b)]	NCVA	Shortline	3	0.10%	0	0	3
Shenandoah Valley Railroad[(e)]	SV	Shortline	20	0.66%	0	0	20
Winchester & Western Railroad	WW	Shortline	27	0.89%	0	0	27
Subtotal (Shortline)			***196***	***6.46%***			
Virginia Rail Network Total			***3,037***	***100%***	***288***	***392***	***3,547***

Sources: Class I Railroad Annual R-1 Reports to the Surface Transportation Board (2016); Virginia Class I and shortline railroads; Virginia DRPT

Notes:

a) Total Miles Owned for CSX includes the 758 miles reported by CSX to the STB in a 2016 R-1 Report filing, plus 200 miles owned by CSX and leased to shortline BB, which includes Richmond-Clifton Forge, Virginia (191 miles), and Gordonsville-Orange, Virginia (9 miles). In

[1] Trackage rights allow one railroad to operate over the infrastructure of another railroad.

the 2016 R-1 Report filing to the STB, CSX identifies these 200 miles as Miles Operated Under Trackage Rights, as CSX has trackage rights over the 200 miles of railroad it leases to BB. These 200 miles are included in the Total Miles Owned and Miles Operated Under Trackage Rights figures for CSX in the table and are only counted once for the Total Miles Operated figure in the table. The Total Miles Operated figure also includes 30 miles of line of proprietary companies, as indicated in the 2016 R-1 Report filing to the STB by CSX, and not identified specifically by CSX.

b) *Shortline railroad is owned by Genesee & Wyoming, Inc.*
c) *Chesapeake Western Railway is a subsidiary of NS.*
d) *Norfolk & Portsmouth Belt Line Railroad is owned jointly by CSX and NS.*
e) *Shenandoah Valley Railroad is currently operated under agreement by Durbin & Greenbrier Valley Railroad (DGVR).*

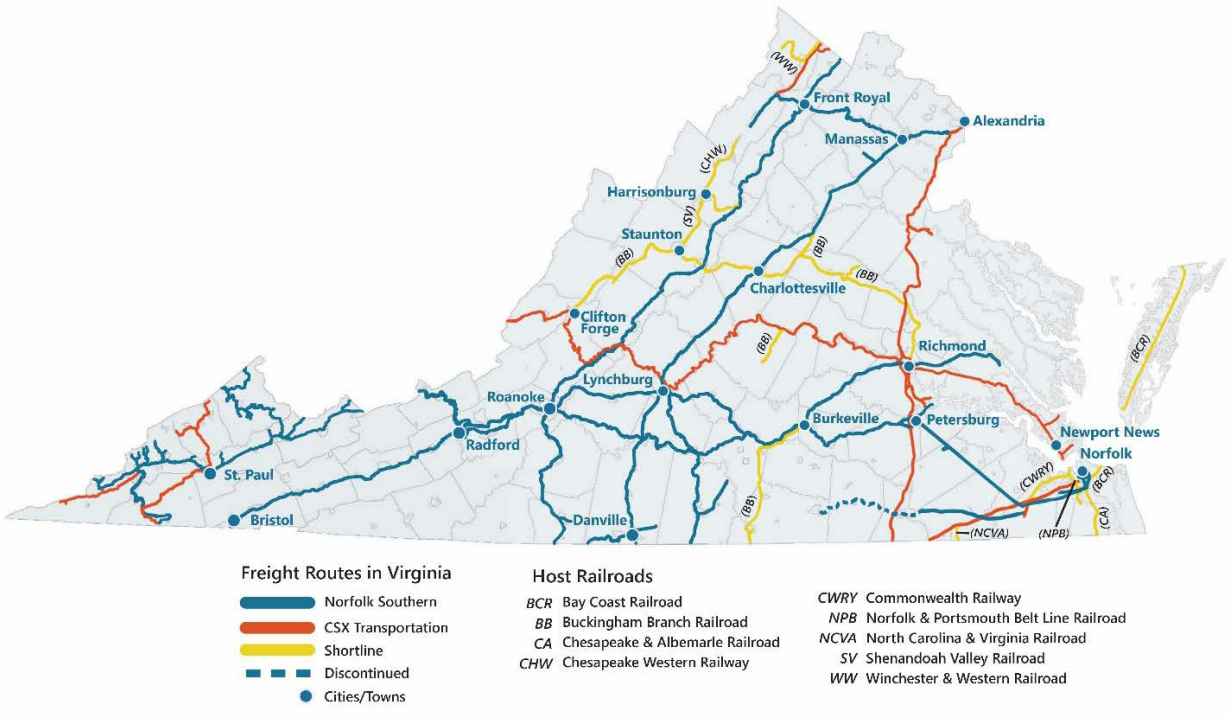
Freight Rail Network

Class I Railroads

Class I railroads are defined as those railroads that have an annual carrier operating revenue of $250 million or more (in 1991 dollars) according to the FRA. There are seven Class I railroads in the U.S. and Canada; some of which also have transportation linkages to Mexico.

The freight railroad routes in Virginia are mapped in **Figure 2-1.** Virginia is served by two Class I railroads: CSX and NS. A brief description of each railroad appears in the following chapters. Details of the railroads' existing conditions and operating characteristics appear in **Appendix A**.

Figure 2-1: Freight Railroad Routes in Virginia



Source: DRPT

CSX Transportation

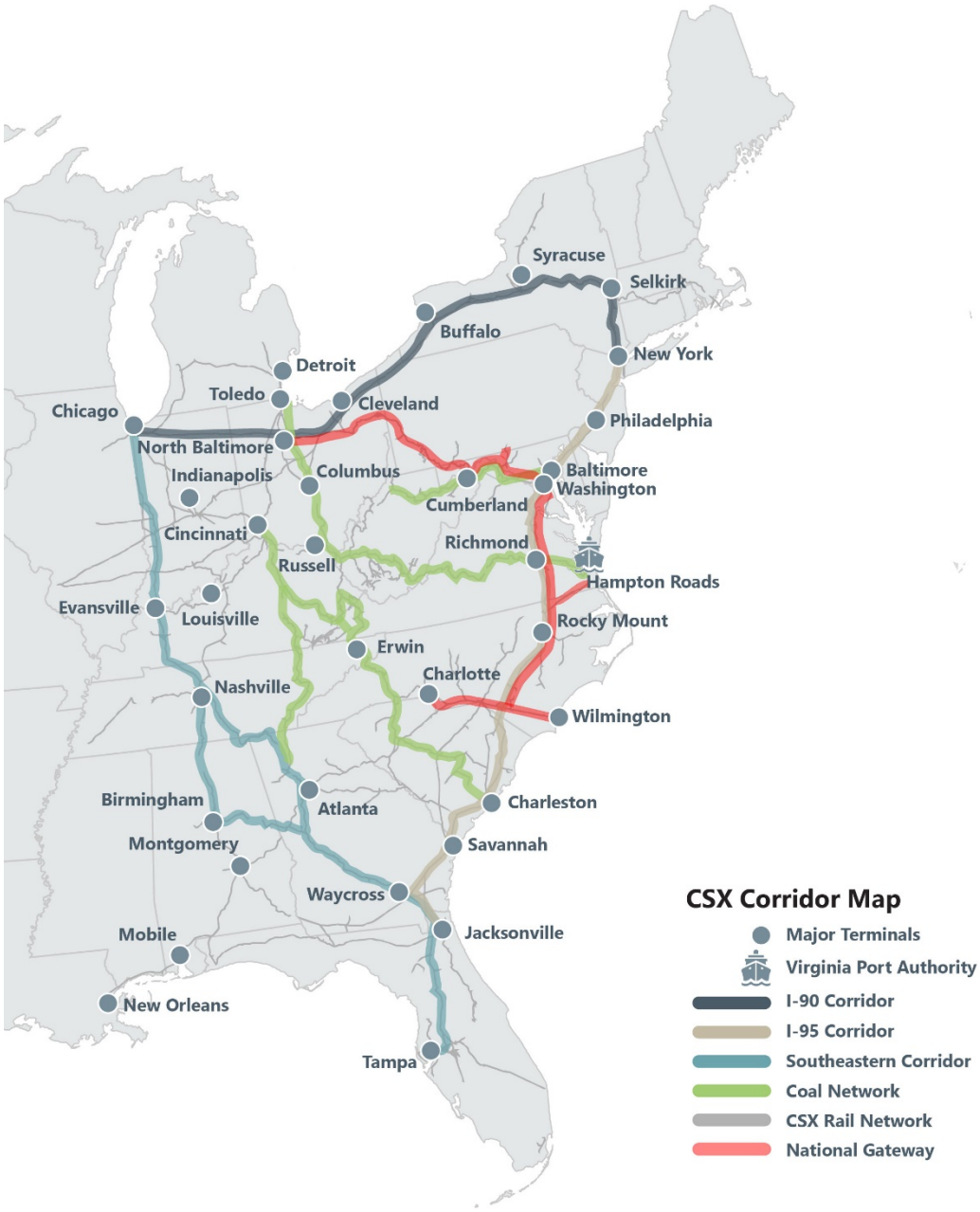
Based in Jacksonville, Florida, CSX owns companies providing rail, intermodal, and rail-to-truck transload, connecting more than 70 river, ocean, and lake ports, as well as more than 200 shortline railroads. CSX operates one of the largest railroads in the eastern U.S. with a 21,000-mile rail network linking commercial markets in 23 states, Washington, D.C., and two Canadian provinces. CSX owns 958 miles of track in Virginia. Including trackage rights, CSX operates over a total of 1,051 miles of rail lines in Virginia.

CSX operates three major corridors in the Commonwealth:

- The **I-95 Corridor** is CSX's primary north-south route through Virginia, generally paralleling Interstate 95 and providing intermodal and merchandise freight service between the Southeast and Northeast U.S. markets.
- The **National Gateway Corridor** is CSX's primary intermodal train corridor connecting the Port of Virginia and international markets to major markets in the U.S. Midwest. In Virginia, the National Gateway Corridor shares the same tracks with the I-95 Corridor, before the two corridors diverge at Washington D.C.
- The **CSX Coal Network Corridor** is CSX's primary east-west route across Virginia, running along the James River for most of its route, from the coalfields of West Virginia to Newport News.

CSX's major railroad corridors are identified in **Figure 2-2**.

Figure 2-2: CSX Corridor Map



Source: FRA

Norfolk Southern Railway

Norfolk Southern Railway, headquartered in Norfolk, Virginia, operates approximately 21,000 route-miles in 22 eastern states and Washington D.C. NS owns 1,883 miles of track in Virginia. Including trackage rights, NS operates on a total of 1,990 miles of track in Virginia.

NS operates two major corridors in the Commonwealth:

- The **Crescent Corridor** is the NS primary north-south route through Virginia, generally paralleling Interstate 81 and providing intermodal and merchandise freight service between the Southeast and Northeast U.S. markets, including service to Virginia's Inland Port at Front Royal.
- The **Heartland Corridor** is the NS primary east-west route, generally paralleling US-460, and is the primary east-west intermodal train corridor connecting the Port of Virginia and international markets to major markets in the U.S. Midwest.

The Crescent Corridor is identified in **Figure 2-3**, and the Heartland Corridor is mapped in **Figure 2-4.**

Figure 2-3: NS Crescent Corridor

Source: NS

Figure 2-4: NS Heartland Corridor

Source: NS

Class II Railroads

There are no Class II railroads currently operating in Virginia. Class II carriers, as defined by the FRA and STB, have revenues ranging from $37.4 million to under $467.0 million and are generally considered to be regional in character.

Shortline Railroads

There are nine shortline railroads, in Virginia. Shortline railroads are local railroads that primarily engage in freight haulage or line haul services or terminal switching services. The shortline railroads in Virginia typically operate on lines once owned and operated by the Class I railroads; when the Class I railroads discontinued service on a line, the shortline railroads assumed ownership and/or operation of the route.

A brief description of each operating shortline railroads in Virginia is included in **Table 2-2**. Details on the railroads' existing conditions and operating characteristics appear in **Appendix A**.

Table 2-2: Shortline Railroad Operational Areas, Interchanges, and Major Commodities

Shortline Railroad	Operational Area	Interchanges	Major Commodities
BCR	Norfolk to Virginia Beach and Cape Charles, Virginia to Pocomoke City, Maryland	NS and NPB in Norfolk; NS in Pocomoke City, Maryland	Chemicals, gas, grain, paper, aggregates, cement, and hi-wide shipments
BB	Dillwyn to Bremo Bluff and leases an additional 258 miles of track from CSX and NS	Virginia Southern division: NS in Burkeville; original BB line: CSX in Strathmore; leased R&A Division: CSX in Clifton Forge and Doswell, and NS in Charlottesville and Waynesboro *See Note (a) below*	Stone, lumber, chemicals, gases, food, beverages, beer, wine, and overhead empty cars
CA	Chesapeake, Virginia to Edenton, North Carolina	NS at Chesapeake; CSX at Portsmouth	Agricultural products, lumber, fertilizer, cement, concrete containers, plastic pellets, and stone
CHW	North-south line, which extends from Mt. Jackson to Pleasant Valley, and an east-west line which extends from Elkton to Harrisonburg	NS near Elkton; SV in Pleasant	Milled grain products for the poultry industry, lumber, and chemicals
CWRY	Dual Class I railroad access to the marine terminals and industries in Portsmouth, with rail connections to both NS and CSX near Suffolk. New rail marshalling yard near Suffolk	NS and CSX in Suffolk	Chemicals and intermodal
NPB	Terminal switching company that links commerce around the deep-water port from Sewells Point to Portsmouth Marine Terminal, including along the Southern Branch of the Elizabeth River	NS and CWRY in Norfolk; CSX in Portsmouth	Farm products, construction materials, cement, and chemicals
NVCA	Boykins to the North Carolina state line	CSX in Boykins	Plastic pellets, cement, chemicals, fertilizer, soybeans, and steel.

Shortline Railroad	Operational Area	Interchanges	Major Commodities
SV	Staunton to Pleasant Valley in Rockingham County	BB in Staunton; NS in Pleasant Valley	Agricultural products, industrial and municipal commodities, road salt, propane, fertilizer, wood products, and ink
WW	Gore to Winchester and from Winchester to the state line	CSX in Winchester, VA and Martinsburg, WV; NS in Hagerstown, MD	Coal, sand, scrap metal, aggregates, steal, flour, plastic resins, biodiesel, paper, corn syrup, and tallow

Sources: Virginia shortline railroads; DRPT

Notes:

a) Amtrak operates its long-distance Cardinal passenger train route over BB between Orange and Clifton Forge three days a week, providing local station service at Charlottesville, Staunton, and Clifton Forge. Partners with the National Railway Historic Society to offer seasonal excursion rides departing from Dillwyn.

Industrial Railroads

Industrial railroads in Virginia typically provide intraplant and interplant rail switching service to industrial and manufacturing customers and facilitate carload interchange with operating Class I or shortline railroads. These small privately owned switching railroads operate over private track. These operations can be owned and operated by the company they serve or can be operated under a contract agreement with an outside party. The mileage of privately-owned industrial track is not included in route-mile calculations of the Virginia rail network. Currently, there are no industrial railroads in Virginia.

Passenger Rail Network

Amtrak provides intercity passenger rail service throughout Virginia, and VRE provides commuter rail service in northern Virginia and Washington, D.C. DRPT funds both the Amtrak Northeast Regional intercity passenger services and VRE commuter rail services operating within the Commonwealth of Virginia.

Amtrak Services

Amtrak's current passenger rail network spans 21,300 route-miles, serving 46 states, Washington, D.C., and three Canadian provinces. Amtrak generally operates over the tracks of private freight railroads, with a few exceptions. In Virginia, all Amtrak service is provided on track owned by freight railroads.

Table 2-3 shows the current network of Amtrak routes in the East that serve Virginia. As of 2016, Amtrak was operating two types of service in the Commonwealth: Virginia regional service trains and

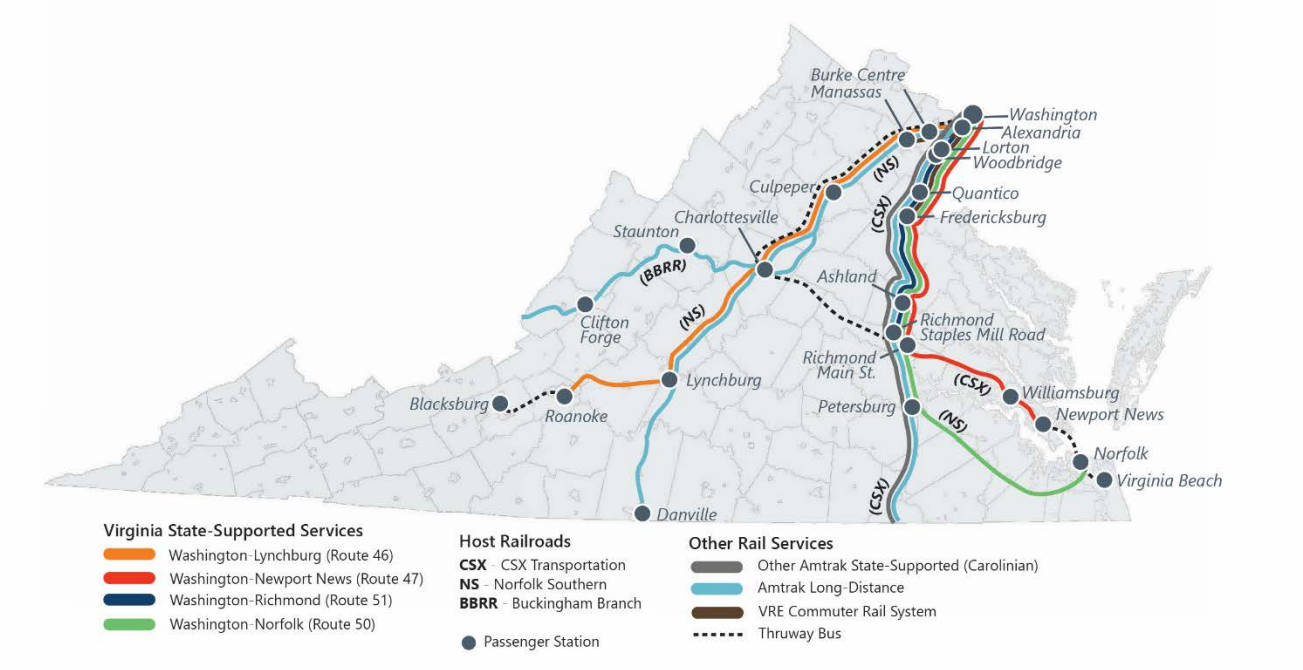
long-distance trains. One of the long-distance trains, the Carolinian, is supported by the State of North Carolina and is sometimes referred to as an interstate corridor train. Combined, Amtrak operates between 23 and 26 trains per day in the Commonwealth, serving 20 stations, using Amtrak-owned equipment. A map of Amtrak's routes and stations within Virginia is provided in **Figure 2-5**.

Table 2-3: Amtrak Routes in the East

Type of Service	Virginia Regional Service Route Number/Train Name	Description
Regional	46	Washington – Lynchburg
	47	Washington – Newport News
	50	Washington – Norfolk
	51	Washington – Richmond
Long Distance	Carolinian (supported by the State of North Carolina)	New York – Washington – Richmond – Raleigh – Charlotte
	Auto Train	Lorton, VA - Sanford, FL
	Cardinal	New York – Washington – Charlottesville – White Sulphur Springs – Charleston – Cincinnati – Indianapolis – Chicago
	Crescent	New York – Washington – Charlottesville – Greensboro – Charlotte – Atlanta – Birmingham – New Orleans
	Palmetto	New York – Washington – Richmond – Charleston – Savannah
	Silver Meteor	New York – Washington – Richmond – Charleston – Savannah – Jacksonville – Orlando – Miami
	Silver Star	New York – Washington – Richmond – Raleigh – Columbia – Savannah – Jacksonville – Tampa – Orlando – Miami

Source: Amtrak

Figure 2-5: Map of Amtrak Routes and Stations in Virginia



Virginia Regional Services

Virginia regional services are southward extensions of Amtrak owned/operated Northeast Regional trains operating on the Northeast Corridor between Boston, New York, and Washington, D.C. Amtrak Northeast Regional trains are extended south of Washington, D.C. on four different routes, providing passengers with a one-seat ride between 16 stations regional served train stations in Virginia and destinations along the Northeast Corridor.

DRPT provides operational support for these trains under a cost-sharing partnership with Amtrak. This partnership launched three new service expansions in Virginia by extending southward the routes of Northeast Corridor service that previously ended in Washington, D.C. They are:

1. A daily round trip between Lynchburg and the Northeast Corridor, begun in 2009.
2. A third daily round trip between Richmond and the Northeast Corridor, begun in 2010.
3. A daily round trip between Norfolk and the Northeast Corridor, begun in 2012.

Long-Distance Services

Long-Distance trains are trains that operate on routes greater than 750 miles and do not require state operating support under PRIIA. These trains are federally funded through discretionary grants to Amtrak made annually by the U.S. Congress. The one exception in Virginia is the Carolinian, which is

supported by the State of North Carolina. The following Long-Distance trains operated by Amtrak serve Virginia:

- Silver Meteor: One daily round trip between Miami and New York
- Silver Star: One daily round trip between Miami and New York
- Palmetto: One daily round trip between Savannah and New York
- Carolinian: One daily round trip between Charlotte and New York
- Crescent: One daily round trip between New Orleans and New York
- Cardinal: Three-times-weekly service between Chicago and New York via WV
- Auto Train: One daily round trip between Virginia (Lorton) and Florida (Sanford)

Intermodal Connections

Of the 20 Amtrak passenger rail stations in Virginia, connections to local and regional transportation networks (i.e. bus, subway, light rail, etc.) are available at 15 stations, as shown in **Appendix B**.

Virginia Railway Express Services

VRE has been providing commuter rail service to the residents of Northern Virginia since 1992. VRE's mission is to offer safe, cost-effective, accessible, reliable, convenient, customer-responsive, and commuter-oriented passenger rail service.

VRE is jointly owned and managed by the Northern Virginia Transportation Commission (NVTC) and the Potomac & Rappahannock Transportation Commission (PRTC). Members of both commissions sit on the VRE Operations Board, which is responsible for making recommendations to the commissions with respect to VRE's management, financing, and acquisition of property. Member jurisdictions include Spotsylvania County, City of Fredericksburg, Stafford County, Prince William County, City of Manassas, City of Manassas Park, Fairfax County, Arlington County, and City of Alexandria, as well as DRPT. The commuter agency's daily operations and capital projects are financed with a combination of federal, state, and local funds, and farebox revenue.

VRE commuter trains are operated under contract by Keolis Rail Services America, using Keolis train crews and VRE-owned equipment. In Virginia, all VRE services are operated over tracks owned by freight railroads. The agency currently operates 32 weekday trains on two lines with a total of 87 route-miles and 19 stations. The two lines join at Alexandria and share a 9-mile corridor northward across the Potomac River on the Long Bridge to Washington Union Station. **Figure 2-6** shows the current VRE commuter rail system. VRE's most recent system expansion was in 2015 when the system grew by 6 miles with the opening of a new station in Spotsylvania County. It was the first extension of VRE's system since its 1992 startup.

Figure 2-6: VRE Commuter Rail Network

VRE trains operate Monday-Friday only, with most trips timed to bring passengers to Washington, D.C. for work in the morning and from Washington, D.C. back home in the evening. Supplemental service is provided by Virginia's regional service through the Amtrak Northeast Regional trains under a cross-honor ticketing agreement. During the AM and PM rush hour, three Amtrak Northeast Regional trains make an additional stop traveling northbound and southbound at L'Enfant Station for VRE ticketholders.

Detailed information on VRE operations, fares, and equipment can be found at: http://www.vre.org/. Additional information about commuter rail stations in Virginia, including intermodal connections, can be found in **Appendix B.**

Railroad Abandonments and Railbanked Lines

Background

Abandonment and discontinuance of common carrier rail service is allowed by federal law. Prior to formally abandoning or discontinuing service on a line, the railroad must seek the permission of the Surface Transportation Board (STB). The Commonwealth, through DRPT, has no regulatory jurisdiction in matters regarding railroad operations or service in Virginia, but it does participate in the STB abandonment process when required.

Several hundred miles of Class I railroads were abandoned, sold, or leased to shortline railroads between 1970 and 2010 due to changing federal laws and economic conditions. None of the abandoned rail lines were acquired by DRPT during that timeframe.

Rail Abandonments and Discontinuances Since 2012

Table 2-4 identifies Virginia railroad abandonments and discontinuances approved by the STB since 2012, as well as cases that are still pending as of November 2016.

Table 2-4: Virginia Railroad Abandonments and Discontinuances: 2012-2017

Scope	Rail Carrier	Miles Abandoned/ Discontinued	Abandonment Dates	STB Docket Number
Approximately 1.55 miles of rail known as the James River Industrial Track between State Road 5 in the City of Richmond and Henrico County, Virginia	CSX / NS	1.55	Granted February 21, 2013	AB-55 (SUB-NO. 726X) for CSX; AB 290 (SUB-NO. 303X) for NS
Approximately 53.2 miles of rail extending from milepost FD 37.0 to FD 90.7 between Franklin and Edgerton, Virginia	NS	53.20	Notice of Exemption of Discontinuance of Service March 13, 2014	AB-290 (SUB-No. 359X)
Approximately 0.46 miles of rail extending from milepost CP 9.40 to milepost CP 9.86, in the City of Hopewell, Virginia	NS	0.46	Granted July 31, 2014	AB-290 (SUB-No. 364X)

Scope	Rail Carrier	Miles Abandoned/ Discontinued	Abandonment Dates	STB Docket Number
Approximately 1.40 miles of rail extending from milepost DW 45.8 (near Highway 220B) to milepost DW 47.2 (near Woodvale Ct.) in Henry County, Virginia	NS	1.40	Granted December 5, 2014	AB-290 (SUB-No. 363X)
Approximately 0.7 miles of rail extending from milepost N 133.4 to N 134.1 in Nottoway County, Virginia	NS	0.70	Granted October 16, 2015	AB-290 (SUB-No. 378X)
Approximately 15.5 miles of rail extending from milepost B 84.0 to B 99.5 between Broadway and Mt. Jackson, Virginia in Rockingham and Shenandoah Counties	NS (CW)	15.50	Notice of Exemption to Discontinue Service December 23, 2016	AB-290 (SUB-No. 391X)
Approximately 0.5 miles of rail extending from milepost R 4.0 to R 4.5 in Roanoke, Virginia	NS	0.50	Notice of Exemption to Abandon March 23, 2017	AB-290 (SUB-No. 389X)
Total rail line abandonments and discontinuances 2012 – 2017		**73.31**		

Source: DRPT and STB Website

Railbanked Lines and Interim Trail Use

Railbanking is a process established under federal law that allows public entities to preserve established railroad rights-of-way for future reactivation of rail service, to protect rail transportation corridors, and to provide for recreational uses such as hiking and bicycling. Many abandoned lines have been repurposed for interim recreational trail use in Virginia. When a line is railbanked, a private or public entity takes over use and maintenance of the corridor; however, the railroad maintains the right to reclaim the corridor for future rail use.

Rails-To-Trails

When an abandoned rail corridor is railbanked and a recreational use trail is established, that trail is referred to as a rail-trail. The Virginia Department of Conservation and Recreation (DCR), in consultation with DRPT, reviews all potential rail abandonments in the state for suitability as

recreational corridors under the Federal Rails to Trails legislation.[2] There are approximately 100 rail-trails within the Commonwealth, with additional rail-trails currently under development. [3,4] The TrailLink website currently lists all rail-trails in Virginia, and provides detailed information, such as location, surface type, and accessibility.

Rails-With-Trails

When a public or private organization establishes a recreational trail along and adjacent to an existing active rail line, it is referred to as a "rail-with-trail" project. DCR is the Commonwealth's primary agency responsible for coordinating rail-with-trail projects in Virginia. Currently, there are no rails-with-trails in Virginia. Although Virginia State Code provides indemnity for private property owners entering into an agreement with the Commonwealth that allows for public access to a property, host railroads continue to be wary of potential liability issues regarding recreation access in and around active rail lines.

2.1.2 Major Freight and Passenger Terminals and Stations

Freight Rail Yards and Facilities in Virginia

Virginia's freight railroads have multiple facilities to support railroad operations and maintenance and interface with freight shippers and receivers in the state. Major freight rail yards, terminals, and facilities of the Class I and shortline railroads in Virginia are identified and described in **Appendix A**. The most notable is the Port of Virginia that operates multiple terminals across the state and is a major contributor to rail traffic. The following freight rail facilities presently exist in Virginia:

- Switching yards and terminals
- Intermodal container transfer facilities
- Transload facilities
- Freight car repair facilities
- Locomotive repair and servicing facilities

Passenger Rail Stations in Virginia

There are currently 20 Amtrak and 17 VRE passenger rail stations in Virginia, serving a combined average daily boardings and alightings of approximately 26,522. Boardings and alightings for each

[2] http://www.dcr.virginia.gov/recreational-planning/document/grchpt04.pdf
[3] Rails-to-Trails Conservancy lists several trails in Virginia on its interactive mapping website: https://www.traillink.com/trailsearch/?mmloc=virginia&utm_source=railstotrails.org&utm_medium=experience-trails_search-tool&utm_campaign=RTCreferrals
[4] The Claudius Crozet Blue Ridge Tunnel Foundation is a public-private initiative to open an old rail tunnel to trail traffic underneath Afton Mountain. More information can be found at http://blueridgetunnel.org/

station are shown in **Table 2-5.** In addition to stations within the Commonwealth, many residents of Northern Virginia begin or end their passenger rail journeys at Washington Union Station. Amtrak's FY 2015 Virginia State Fact Sheet estimates that among the 5 million annual passengers using Washington Union Station, more than 1 million live in Northern Virginia. Details on the physical characteristics of the 20 Virginia station facilities served by Amtrak and the 17 VRE stations are found in **Appendix B**.

Table 2-5: Boardings and Alightings at Passenger Rail Stations in Virginia

Station Name (Amtrak Station Code)	Amtrak Daily Trains	Amtrak Average Daily Boardings and Alightings in 2015	VRE Daily Trains	VRE Average Weekday Boardings and Alightings in 2015	Major Corridors
Alexandria (ALX) (Amtrak/VRE)	21-24	512	30	1,990	Northern Virginia, Seminole, Washington, D.C. to North Carolina
Ashland (ASD) (Amtrak Only)	9-10	77	N/A	N/A	Washington, D.C. to North Carolina
Backlick Road (VRE Only)	N/A	N/A	16	509	Northern Virginia, Seminole
Broad Run (VRE Only)	N/A	N/A	16	2,198	Seminole
Brooke (VRE Only)	N/A	N/A	14	1,251	Washington to North Carolina
Burke Center (BCV) (Amtrak/VRE)	2	20	16	1,742	Northern Virginia, Seminole
Charlottesville (CVS) (Amtrak Only)	4-6	386	N/A	N/A	East-West, Seminole,
Clifton Forge (CLF) (Amtrak Only)	0-2	7	N/A	N/A	East-West
Culpeper (CLP) (Amtrak Only)	4-6	40	N/A	N/A	Seminole
Crystal City (VRE Only)	N/A	N/A	30	3,449	Northern Virginia, Seminole, Washington to North Carolina
Danville (DAN) (Amtrak Only)	2	21	N/A	N/A	Seminole

Station Name (Amtrak Station Code)	Amtrak Daily Trains	Amtrak Average Daily Boardings and Alightings in 2015	VRE Daily Trains	VRE Average Weekday Boardings and Alightings in 2015	Major Corridors
Franconia-Springfield (VRE Only)	N/A	N/A	14	656	Washington to North Carolina
Fredericksburg (FBG) (Amtrak/VRE)	13-14	N/A	14	2,536	Washington to North Carolina
Leeland Road (VRE Only)	N/A	N/A	14	1,971	Washington to North Carolina
Lorton (VRE Only)	N/A	N/A	14	1,392	Washington to North Carolina
Lorton (LOR) (Amtrak Auto Train Only)	2	744	N/A	N/A	Washington to North Carolina
Lynchburg (LYH) (Amtrak Only)	4	233	N/A	N/A	Northern Virginia, Seminole
Manassas (MSS) (Amtrak/VRE)	4-6	77	16	1,590	Northern Virginia, Seminole
Manassas Park (VRE Only)	N/A	N/A	16	1,426	Northern Virginia, Seminole
Newport News (NPN) (Amtrak Only)	4-5	316	N/A	N/A	East-West
Norfolk (NFK) (Amtrak Only)	2	123	N/A	N/A	Heartland
Petersburg (PTB) (Amtrak Only)	10	82	N/A	N/A	Washington to North Carolina
Quantico (QAN) (Amtrak/VRE)	11-12	90	14	1,052	Washington to North Carolina
Richmond – Main Street (RVM) (Amtrak Only)	4-5	123	N/A	N/A	East-West
Richmond – Staples Mill Road (RVR) (Amtrak Only)	17-18	992	N/A	N/A	Washington to North Carolina
Rippon (VRE Only)	N/A	N/A	14	1,164	Washington to North Carolina

Station Name (Amtrak Station Code)	Amtrak Daily Trains	Amtrak Average Daily Boardings and Alightings in 2015	VRE Daily Trains	VRE Average Weekday Boardings and Alightings in 2015	Major Corridors
Rolling Road (VRE Only)	N/A	N/A	16	809	Northern Virginia, Seminole
Spotsylvania (VRE Only)	N/A	N/A		Opened late 2015	Washington to North Carolina
Staunton (STA) (Amtrak Only)	0-2	22	N/A	N/A	East-West
Williamsburg (WBG) (Amtrak Only)	4-5	169	N/A	N/A	East-West
Woodbridge (WDB) (Amtrak/VRE)	4-5	66	14	1,189	Washington to North Carolina

2.1.3 Rail Service Objectives

Vision

Virginia's vision for its multimodal transportation network, described in VTrans2040, is to be *Good for Business, Good for Communities, and Good to Go*. Virginians will benefit from a sustainable and reliable transportation system that advances Virginia businesses, attracts a 21st century workforce, and promotes healthy communities where Virginians of all ages and abilities can thrive.

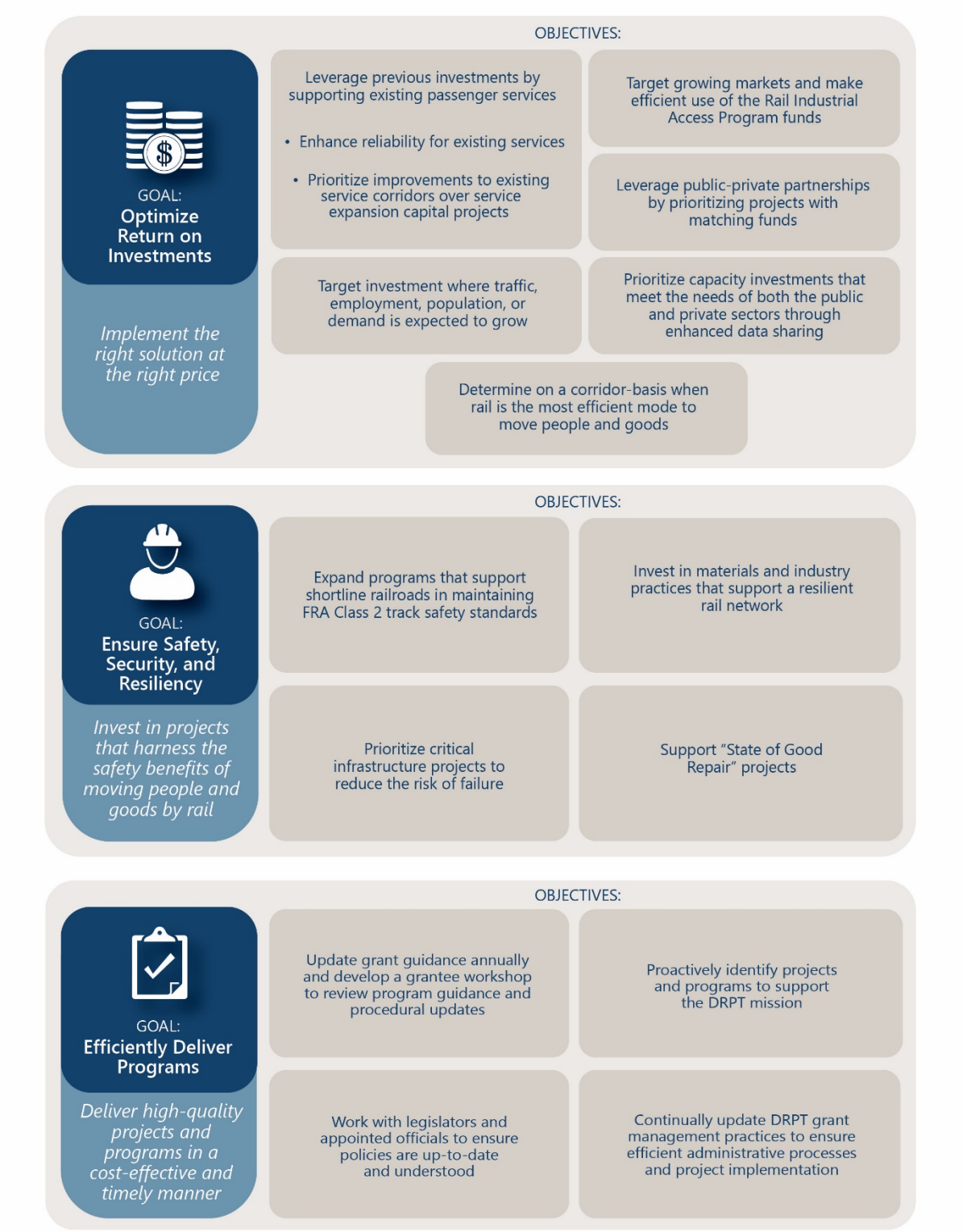
DRPT serves as Virginia's lead agency for rail and public transportation, with the mission to facilitate and improve the mobility of the citizens of Virginia and to promote the efficient transport of goods and people in a safe, reliable, and cost-effective manner. DRPT is also responsible for administering funds for rail investments and public transportation agency formula funds.

The Virginia State Rail Plan recognizes Virginia's vision and DRPT's mission and provides a framework for achieving both of these desired future outcomes through investments in Virginia's rail network as part of a multimodal transportation system supporting economic growth.

The Virginia Rail Plan goals are listed in blue and reflect the VTrans2040 Guiding Principles on the left side of **Figure 2-7**. Corresponding objectives for each goal are shown in tan on the right. The objectives show how DRPT can advance freight and passenger rail through planning efforts and funding programs under the DRPT's purview. Together the rail plan goals and objectives are tools to evaluate and prioritize short-term and long-term planning efforts and investments.

Virginia's rail network is a valuable asset that drives the economy, reduces congestion, improves safety, and saves taxpayer money. Continued investment in rail infrastructure will ensure the mission and vision for the Commonwealth's transportation network is achieved.

Figure 2-7: Goals and Objectives to meet Virginia's Vision for Multimodal Transportation



GOAL: Consider Operational Improvements and Demand Management First

Maximize capacity of the transportation network through increased use of technology and operational improvements before investing in major capacity expansions

OBJECTIVES:

- Encourage use of Intelligent Transportation Systems to improve operational efficiency
- Evaluate operations when considering investment in capacity to ensure the investment yields a lasting benefit
- Incorporate program criteria that prioritize low-cost improvements to relieve bottlenecks and provide capacity

GOAL: Ensure Transparency and Accountability, and Promote Performance Management

Work openly with partners and engage stakeholders in project development and implementation, and establish performance targets that consider the needs of all communities

OBJECTIVES:

- Publicize application evaluation metrics and project data for rail funding programs
- Implement passenger rail station stop policy
- Develop program scorecards to measure impact of rail investments
- Market economic impact of rail investment

GOAL: Improve Coordination between Transportation and Land Use

Encourage local governments to plan and manage transportation-efficient land development by providing incentives, technical support, and collaborative initiatives

OBJECTIVES:

- Encourage local governments to support state funding decisions by making compatible investments and zoning
- Educate localities on appropriate land uses around both freight and passenger rail infrastructure
- Encourage local governments to support rail services with multimodal last-mile connections
- Integrate with and expand upon other state, regional, and local planning efforts

GOAL: Ensure Efficient Intermodal Connections

Provide seamless connections between modes of transportation

OBJECTIVES:

- Prioritize rail projects that benefit the highway system and improve mode choice
- Enhance rail service to the Port
- Support " State of Good Repair" and capacity projects with shortlines

GOAL: Support Regional Economic Development

Encourage local and regional economic development through investment in the rail network

OBJECTIVES:

- Work closely with Virginia Economic Development Partnership to attract rail conducive industries in accordance with the Code of Virginia
- Promote the use of the Rail Industrial Access program through education and outreach with local economic development offices
- Include input from local and regional freight railroads in economic development planning and initiatives
- Expand transportation options between regional markets through enhancements to passenger rail service

Source: DRPT

2.1.4 Passenger Rail Performance Evaluation

This chapter provides an overview of performance metrics for Amtrak intercity passenger and VRE commuter rail operations in Virginia. The information presented here represents the extent of publicly available information and information that DRPT, Amtrak, and VRE have agreed to include in the State Rail Plan. Information identified as Confidential and Proprietary has not been included. Amtrak performance information is presented for Amtrak fiscal years, which begin on October 1 of the prior year and end on September 30 of the year identified. Detailed information is in **Appendix C**.

Ridership and Utilization of Amtrak Services

Table 2-6 depicts the changes in total ridership on Amtrak Virginia regional service and long-distance services serving Virginia. The table captures ridership information from Amtrak's FY 2012 to the end of FY 2016. Overall ridership on Virginia regional service trains increased from 808,771 passengers in FY 2012 to 838,329 passengers in FY 2016, with a high mark in FY 2013 with 887,850 passengers carried from, to, or through Virginia on four different Northeast Regional passenger routes.

Table 2-6: Total Ridership on Amtrak Trains that Operate in Virginia, FY 2012-2016

Service	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Washington-Lynchburg (Route 46)	184,907	186,125	189,723	189,598	184,868
Washington-Newport News (Route 47)	623,864	573,788	344,335	348,581	329,551
Washington-Norfolk (Route 50)	n/a	127,937	152,135	153,857	146,605
Washington-Richmond (Route 51)	n/a	n/a	190,833	186,268	177,305
All Virginia Regional Services	**808,771**	**887,850**	**877,026**	**878,304**	**838,329**
Carolinian	306,419	319,380	302,601	298,973	285,801
Cardinal	116,373	113,103	109,154	103,633	104,831
Crescent	304,266	306,733	294,306	281,777	268,344
Palmetto	198,260	207,915	203,168	208,645	380,815
Silver Meteor	375,164	373,162	348,581	346,097	339,407
Silver Star	425,794	414,077	405,695	383,347	364,271
Total Long-Distance Services in Virginia	**1,683,953**	**1,680,264**	**1,635,349**	**1,595,121**	**1,696,116**
Total Ridership on Amtrak Trains Operating in Virginia	**2,492,724**	**2,568,114**	**2,512,375**	**2,473,425**	**2,534,445**

Ridership for all trains serving Virginia increased 2% between FY 2012 and FY 2016. In addition to ridership increases on the Virginia regional service trains, the long-distance Palmetto also experienced significant ridership gains of 92% between FY 2012 and FY 2016, owing to the October 26, 2015, discontinuance and combination of the Palmetto with two other Northeast Regional trains between

New York and Washington, D.C. and the addition of several station stops including New Brunswick, NJ; Princeton, NJ; BWI Airport; and New Carrollton, MD, to the Palmetto's schedule.

Changes in Amtrak ridership reporting methodology affected the reported ridership of the two daily round trips between the Northeast Corridor, Washington, D.C. and Newport News. The reported decline in patronage is attributable to the fact that until FY 2014, Amtrak counted the two daily round trips that terminate in Richmond as a part of this service. After the two Richmond trains were given their own route classification, ridership figures on the Newport News trains decreased by approximately one-half.

Table 2-7 below shows boardings and alightings for each service type at each station in Virginia. Stations are ordered by their total boardings and alightings. Not counting the Auto Train station at Lorton, the top-five stations for boardings and alightings in FY 2016 were:

1. Richmond Staples Mill: 356,189
2. Alexandria: 190,185
3. Charlottesville: 141,827
4. Fredericksburg: 120,275
5. Newport News: 107,894

Table 2-7: Station Activity (boardings and alightings) at Amtrak Stations in Virginia, FY 2016

Station Code	Station Name	WAS-LYH (46)	WAS-NPN (47)	WAS-NFK (50)	WAS-RVR (51)	Carolinian	Auto Train	Cardinal	Crescent	Palmetto	Silver Meteor	Silver Star	Total
RVR	Richmond Staples Mill		88,926	51,675	83,285	35,771				42,188	20,405	33,939	**356,189**
LOR	Lorton (Auto Train)						238,448						**238,448**
ALX	Alexandria	22,184	51,625	22,143	28,196	20,743		4,164	8,655	15,442	6,990	10,043	**190,185**
CVS	Charlottes-ville	82,684						22,922	32,021				**141,827**
FBG	Fredericks-burg		27,134	27,246	52,089	10,153					3,653		**120,275**
NPN	Newport News		107,894										**107,894**
LYH	Lynchburg	68,385							14,401				**82,786**
WBG	Williams-burg		59,677										**59,677**
NFK	Norfolk			44,316									**44,316**
RVM	Richmond Main Street		42,702										**42,702**
PTB	Petersburg			7,386		5,213				7,374	3,628	6,459	**30,060**
ASD	Ashland		9,527	6,597	11,951								**28,075**
MSS	Manassas	17,701						2,883	7,013				**27,597**
QAN	Quantico		9,262	4,170	7,888	4,154							**25,474**

Station Code	Station Name	WAS-LYH (46)	WAS-NPN (47)	WAS-NFK (50)	WAS-RVR (51)	Carolinian	Auto Train	Cardinal	Crescent	Palmetto	Silver Meteor	Silver Star	Total
RVR	Richmond Staples Mill		88,926	51,675	83,285	35,771				42,188	20,405	33,939	**356,189**
LOR	Lorton (Auto Train)						238,448						**238,448**
ALX	Alexandria	22,184	51,625	22,143	28,196	20,743		4,164	8,655	15,442	6,990	10,043	**190,185**
CVS	Charlottes-ville	82,684						22,922	32,021				**141,827**
FBG	Fredericks-burg		27,134	27,246	52,089	10,153					3,653		**120,275**
NPN	Newport News		107,894										**107,894**
LYH	Lynchburg	68,385							14,401				**82,786**
WBG	Williams-burg		59,677										**59,677**
NFK	Norfolk			44,316									**44,316**
WDB	Wood-bridge		1,616	6,191	9,649								**17,456**
CLP	Culpeper	9,390						1,965	3,733				**15,088**
BCV	Burke Centre	9,101											**9,101**
DAN	Danville								7,209				**7,209**
STA	Staunton							6,250					**6,250**
CLF	Clifton Forge							2,401					**2,401**
	Total	**209,445**	**398,363**	**169,724**	**193,058**	**76,034**	**238,448**	**40,585**	**73,032**	**65,004**	**34,676**	**50,441**	**1,553,010**

Note: Charlottesville station count includes ridership of 4,200 that occurred as part of a special, one-time Amtrak train operation.
Source: Amtrak-provided data.

Roughly three-fourths of the boardings and alightings at Virginia's two busiest stations were attributed to Virginia regional service passengers in FY 2016. At Charlottesville, the station's only round trip Virginia regional service train accounted for roughly 60% of all boarding and alightings, despite it being only one-third of the total number of trains that stop there daily.[5] Of the top 10 stations, seven are located in dense, central locations with multimodal transit access. Despite poor transit access and limited parking facilities, Richmond's Staples Mill Station consistently leads the state in boardings and alightings.

[5] The thrice-weekly Cardinal does not stop in Charlottesville daily, but is assumed to be a once-daily train for this illustrative comparison.

Financial Performance of Amtrak Services

Virginia regional services have seen modest revenue increases over the past five years compared to other Amtrak regional services, though revenues declined greater than the nationwide state-supported percentage change in FY 2016 (-3.5 percent in Virginia versus +0.3 percent nationwide). In most years, Amtrak's East Coast long-distance trains had revenue increases less than the nationwide long-distance train average. As it has for many years, the Auto Train generated the highest revenue of any Amtrak long-distance service in FY 2016.

Virginia is responsible for supporting the costs of Northeast Regional passenger rail services in the Commonwealth. Annual costs levied by Amtrak for Virginia's regional services include annual revenues, farebox recovery, and payments to Amtrak made by Virginia for the services. Costs also include day-to-day operations and maintenance as well as capital costs for equipment. As shown in **Table 2-8**[6], between FY 2014 and FY 2016, total costs increased from approximately $41 million to $45 million, and revenues increased from $35 million to $37 million. As the increase in revenue did not match the increase costs, the resulting operating farebox recovery ratio[7] between FY 2014 and FY 2016 decreased from 0.96 to 0.94, effectively resulting in an increase in the amount of costs incurred by Virginia for regional passenger trains.

Table 2-8: Annual Allocated Costs, Revenues, Farebox Recovery, and Payments for Amtrak Regional Passenger Trains in Virginia, 2014-2016

Fiscal Year	2014	2015	2016
Overall Totals			
Total Capital Cost	$4,164,270	$4,997,124	$5,272,968
Total Operating Cost	$37,219,726	$37,451,002	$40,215,584
Total Costs	$41,383,996	$42,448,126	$45,488,552
Total Train Revenues	$35,691,282	$35,675,433	$37,695,934
Operating Farebox Recovery Ratio	0.96	0.95	0.94
Theoretical Amount Owed by DRPT to Amtrak	$2,796,165	$6,772,693	$7,792,618

[6] The amounts in Table 2-9 are exclusive of any previous credits DRPT had with Amtrak for operation of the Lynchburg and Norfolk services prior to the adoption of the formal PRIIA cost allocation methodology for Virginia regional service routes.

[7] Operating farebox recovery ratio is the fraction of operating expenses paid through fares by passengers. It is derived by dividing the total revenue by total expenses.

Fiscal Year	2014	2015	2016
Actual Payment Amount from DRPT to Amtrak[8]	$ 0	$5,601,100	$8,394,308
Washington to Lynchburg (Route 46)			
Capital Cost	$266,533	$976,464	$1,022,148
Operating Cost			
Fixed Costs (PRIIA)	$5,630,552	$5,830,637	$6,000,644
Host and Fuel Costs	$1,549,599	$1,165,254	$966,481
Total Operating	$7,180,151	$6,995,891	$6,967,125
Operating Farebox Ratio	1.16	1.15	1.10
Total Revenues	$8,298,969	$8,030,785	$7,686,322
Washington to Newport News (Route 47)			
Capital Cost	$563,431	$1,431,096	$1,541,040
Operating Cost			
Fixed Costs (PRIIA)	$14,282,212	$15,013,818	$15,569,489
Host and Fuel Costs	$2,586,645	$1,746,994	$ 1,367,782
Total Operating	$16,868,856	$16,760,812	$16,937,270
Operating Farebox Ratio	0.90	0.89	0.88
Total Revenues	$15,252,624	$14,988,873	$14,958,552
Washington to Norfolk (Route 50)			
Capital Cost	$226,713	$1,164,072	$1,219,512
Operating Cost			
Fixed Costs (PRIIA)	$5,389,791	$5,820,451	$5,802,673
Host and Fuel Costs	$1,448,166	$1,216,939	$1,118,601
Total Operating	$6,837,957	$7,037,390	$6,921,274
Operating Farebox Ratio	.85	.87	.92
Total Revenues	$5,827,387	$6,146,636	$6,353,461
Washington to Richmond (Route 51)			
Capital Cost	$211,045	$1,425,492	$1,490,268
Operating Cost			
Fixed Costs (PRIIA)	$4,996,644	$5,652,144	$8,186,156
Host and Fuel Costs	$1,336,118	$1,004,765	$1,203,759
Total Operating	$6,332,762	$6,656,909	$9,389,915

[8] Theoretical and actual amounts owed to Amtrak differ due to adjustments made in invoicing and bill credit accounting after the adoption of the formal PRIIA cost allocation methodology for Virginia regional service routes. Prior to 2015, there was no net outlay of funding for Virginia regional Amtrak service by DRPT due to operating credits.

Fiscal Year	2014	2015	2016
Operating Farebox Ratio	1.00	0.98	0.93
Total Revenues	$6,312,302.22	$6,509,139	$8,697,599

Source: DRPT

On-Time Performance and Customer Satisfaction of Amtrak Services

The following describes the on-time performance (OTP), causes of train delay, and customer satisfaction ratings for Virginia regional service and Amtrak long-distance trains operating in Virginia. Detailed information and data pertaining to on-time performance results, causes of train delay, and customer satisfaction are in **Appendix C**.

Endpoint On-Time Performance. Over the past five years, Virginia regional service trains' endpoint OTP declined through FY 2015 (71.5 percent) and has improved slightly to 81.4 percent for FY 2016. The Lynchburg service along the Seminole Corridor has maintained a higher endpoint OTP over the past five years than the combined Richmond/Norfolk/Newport News services along the Washington, D.C. to North Carolina Corridor. With the exception of the Auto Train, Amtrak's long-distance trains operating in Virginia do not have any endpoints in the state; however, Amtrak's system-wide average mirrored the Virginia trains pattern with a dip in endpoint OTP in FY 2014 of 50.4% and recovery to 63.1% in FY 2016. The Silver Meteor, Silver Star, and Carolinian that travel along the Washington, D.C. to North Carolina Corridor have seen significant declines in endpoint OTP in the past five years.

All Stations On-Time Performance. FY 2016 yielded an improved all-station OTP of 84.3% for all Virginia regional services. In FY 2016, only the Lynchburg service posted all-stations-OTP higher than the PRIIA standard for Northeast Regional services of 85%. All long-distance trains serving Virginia, except the Cardinal, experienced declines in all-station OTP over the last five years. This is likely one of the causes of reduced ridership and revenue for the long-distance services serving Virginia.

Causes of Train Delay. The primary causes of delay on all of the routes serving Virginia are train interference and track and signal problems. Virginia-bound trains may also be delayed by the high volume of train operations on the NEC between Boston, New York, and Washington, D.C. Operations are physically constrained by moveable bridges, tunnels and station platform requirements. In addition, trains serving Virginia must change locomotives from electric to diesel at Washington, D.C. and in some cases add or subtract cars, adding potential for delay.

Customer Service Indicator Scores. Amtrak's Customer Service Indicator (CSI) scores measure the satisfaction of passengers on particular aspects of their trip. Overall, Virginia's regional service trains have maintained CSI scores in the 80 range[9], despite not meeting Amtrak's standard of 90 for FY 2016. The data shows that for the past five years, both on-board comfort and on-board food service scored lowest among CSI metrics measured. On-board cleanliness for all Virginia services has greatly improved in the last five years.

Projects to Improve Service. Several projects and initiatives in recent years have been undertaken to improve service on Amtrak trains serving Virginia. **Table 2-9** details some of the major service improvement initiatives implemented in recent years. Future improvements planned to improve the performance of Virginia's regional service passenger trains are discussed in **Chapter 3**, including rail infrastructure projects to improve the frequency and reliability of Amtrak trains.

Table 2-9: Recent Service Initiatives on Amtrak Trains Serving Virginia

Improvement	Service
Amtrak Thruway bus connection from Charlottesville to Richmond Staples Mill Road and Richmond Main Street Station	Cardinal and Crescent (2014)
Additional stop in Fredericksburg and Roanoke	Silver Meteor (2015); Lynchburg-Roanoke (2017)
Checked bicycle service	Carolinian, Crescent, Palmetto, Silver Meteor, and Silver Star (2015); Washington-Newport News and Cardinal (2016)
Pets on Trains pilot program	Washington-Lynchburg / Newport News / Norfolk and Palmetto (2015); Carolinian, Silver Meteor, and Silver Star (2016)
Business Class service added	Auto Train, Cardinal, and Crescent (2016)

Source: Amtrak press releases announcing service initiatives

Virginia Railway Express Performance

Overall annual ridership on VRE commuter trains between 2011 and 2015 decreased from 4,698,798 annually in FY 2011 to 4,610,084 annually in FY 2015. In November 2015, VRE extended its Fredericksburg Line service south to a new station in Spotsylvania County, and soon after added an eighth round trip on the line. While the Manassas Line has seen a gradual decline in ridership over the

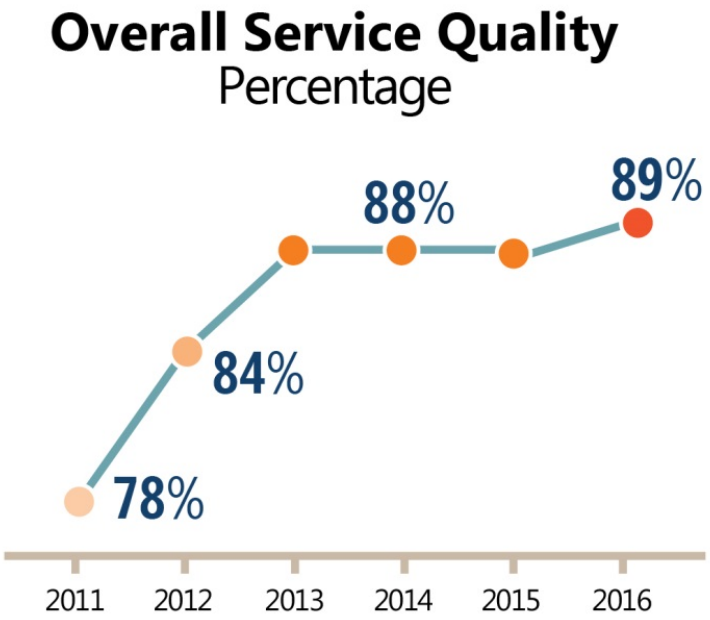
[9] A CSI score of 80, for example, means 80 percent of respondents rated the aspect of their trip in the top three of the 11 steps of the scale.

FY 2011to FY 2015 time period, the Fredericksburg Line has seen modest increases after a three-year period of ridership decline between FY 2011 and FY 2014.

VRE currently operates with an annual overall on-time performance of more than 92 percent. Although OTP has declined slightly since FY 2013, when it was almost 96 percent, OTP remains higher than FY 2011, when system performance was 87 percent. Some of the recent declines in reliability can be attributed to rail capacity improvement projects on the Fredericksburg Line. Rather than suspend service altogether during construction, VRE, DRPT, and CSX adopted construction methods that enabled rail service to continue while work was taking place, but with the potential for lower track speeds or delays at certain times.

VRE's improved performance can be attributed in part to key investments in track capacity to improve reliability, station parking and facility improvements to accommodate more riders, and new equipment for improved capacity and reliability. **Figure 2-8** shows the increase in overall service quality between FY 2011 and FY 2015, as rated by VRE passengers in the agency's 2016 Customer Service Survey. Riders in FY 2016 gave VRE a service quality score of 89 percent—an 11 percent increase from FY 2011—the system's highest ever score.

Figure 2-8: VRE Overall Service Quality Scores



2.1.5 Public Financing for Rail Projects and Services

DRPT, as well as a number of local public agencies in the state, has utilized federal and state transportation funding programs for rail infrastructure improvements. The following is a short summary of state and federal rail funding resources utilized for railroad improvements in Virginia in the recent past.

State-Sponsored Rail Investment Programs

In Virginia, state-sponsored rail investment programs are led by DRPT, with the CTB allocating state funds for the programs. Freight rail funding includes improvements for Virginia's Class I railroads (CSX and NS), nine shortline railroads, the Virginia Port Authority, and businesses expanding or locating on the railroad network. In addition to improving freight capacity, DRPT works to preserve existing freight capacity when accommodating new passenger rail services.[10] State sponsored rail investment programs are described in **Chapter 1.**

Federal Rail-Related Programs and Funding

Federal transportation funding to states is periodically authorized through Federal Surface Transportation Acts. The recently approved Federal Surface Transportation Act, the Fixing America's Surface Transportation (FAST) Act, is a five-year program to improve the nation's transportation infrastructure, including roads, bridges, transit systems, and the rail transportation network. The bill provides for a total of $305 billion in funding from FY 2016 through FY 2020.

The FAST Act places major emphasis on freight investments to be supported by the Highway Trust Fund by creating a new National Freight Program funded at an average of $1.2 billion per year, to be distributed to states by formula. Non-highway projects eligible to receive these funds include rail-highway grade separation and intermodal transfer and access projects.

Title XI of the FAST Act, also known as the Passenger Rail Reform and Investment Act of 2015 (PRIIA), provides for $5.5 billion to be spent on the national intercity rail network outside the NEC. Funding for this program, as well as another $2.2 billion for FRA grant programs, however, are dependent on annual Congressional budget appropriations. No passenger appropriations were passed for the first year of the program.

Appendix D provides details on each of the federal funding programs. **Table 2-10** denotes Virginia's participation in the rail related federal funding programs.

[10] http://www.drpt.virginia.gov/rail/rail-overview/

Table 2-10: Federal Rail-Related Funding Programs Awarded to Virginia

Grant / Fund	Awarded Funding for Virginia (DRPT and VRE)
PRIIA Capital Assistance Program	
PRIIA	No appropriations for high-speed rail grants were included in subsequent federal budgets, and PRIIA authorizations expired on September 30, 2013.
ARRA	A grant of $74.8 million (FY 2010) under the HSIPR Program for the Arkendale to Powells Creek Third Track project. This would fund the construction of a third mainline track near Quantico to improve capacity, schedule reliability, and service quality for freight, commuter and passenger trains on the CSX-owned railroad corridor between Washington, D.C. and Richmond.
High-Speed Intercity Passenger Rail (HSIPR)	A grant of $44.3 million (FY 2010) was awarded to DRPT for completion of the Washington, D.C. to Richmond Southeast High Speed Rail Tier 2 Environmental Impact Statement, preliminary engineering and Service Development Plan. This grant has an 80/20 percent federal/state match.
FASTLANE Program	A grant of $165 million (FY 2016) for the Atlantic Gateway project to unlock the economic potential of the Eastern Seaboard by accelerating key highway and rail projects to provide a long-term, multimodal network for freight and passenger transportation between the Northeast and Southeast.
Federal Surface Transportation Rail-Related Programs	
Rail Rehabilitation and Improvement Financing (RRIF)	VRE, received RRIF funding in FY 2006.

2.1.6 Ongoing Projects for Safety and Security Improvements

Rail safety affects the well-being of railway workers and the public. It also has a major impact on the efficiency of railroad operations. Increased attention has also focused on the safe movement of hazardous materials by rail, especially the movement of crude oil and other flammable liquids. Rail safety requirements are provided through a combination of federal and state laws, and operating procedures specific to each railroad. Most safety-related rules and regulations fall under the jurisdiction of the FRA, as outlined in the Rail Safety Act of 1970 and other legislation, such as the most recent Rail Safety Improvement Act of 2008. FRA's rail safety regulations can generally be found in Title 49 Code of Federal Regulations (CFR) Parts 100-299.[11]

[11] https://www.ecfr.gov/cgi-bin/text-idx?SID=64888b3a481b290ebbcc93726eb7f0c0&mc=true&tpl=/ecfrbrowse/Title49/49cfrv4_02.tpl#0

Rail security has seen increased attention due to the potential for disruption of the transportation system or acts that could place large numbers of citizens at risk. This chapter describes rail safety and security efforts in Virginia.

Rail Safety Programs in Virginia

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP), also known as the Section 130 program, is administered by VDOT and goes towards improvement of railroad grade crossings. A complete list of major projects funded under the Section 130 program is included as **Appendix E.**

Virginia State Corporation Commission (SCC)

Virginia's SCC Division of Utility and Railroad Safety has held the authority since 1919 to regulate the safe operation of passenger and freight rail in the Commonwealth. The SCC also received authority under 49 CFR Part 212 to augment the FRA's safety inspection and regulation program.

The SCC supplements the FRA's roughly eight inspectors that cover various aspects of railroad safety, including track, motive power and equipment, operating practices, hazmat, and signal, with eight of its own inspection staff. In addition, the SCC handles complaints from citizens relating to noise, blocked crossings, crossing signal issues, and train speeding. The SCC also responds to and investigates rail accidents within the state, such as derailments, fatalities, crossing accidents, and chemical/hazmat spills. Virginia is the only state that currently uses a data-driven system to determine locations for upcoming inspections, and coordinates inspections with the FRA to lessen the burden on the freight railroads.

Operation Lifesaver, Inc.

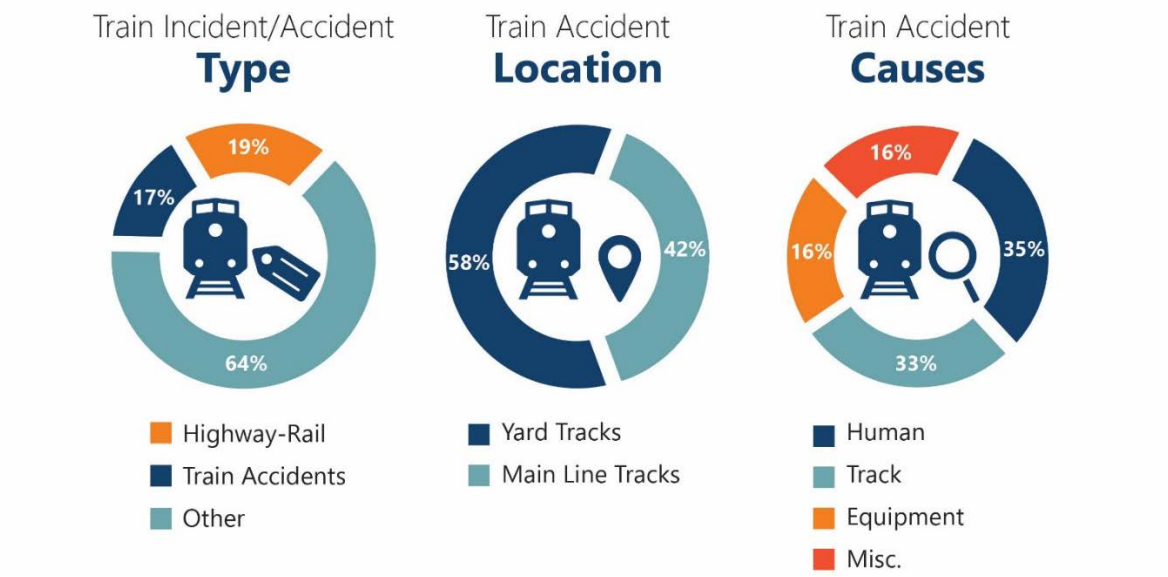
Operation Lifesaver, Inc. (OLI), established in 1972, is headquartered in Alexandria, Virginia. OLI is a non-profit, educational organization for highway-rail crossing safety and rail trespass prevention. This organization promotes safety through education of both drivers and pedestrians to make safe decisions at crossings and around tracks, promoting enforcement of traffic laws related to crossing signals and trespass, and by encouraging continued engineering research and innovation to improve the safety of railroad crossings. DRPT has a liaison that works with the statewide Operation Lifesaver coordinator.

Virginia Rail Accident Statistics

According to the FRA Office of Safety Analysis, in 2015, there were 201 train-related incidents in Virginia, with 19 resulting in fatalities. While total incidents have declined slightly since 2006, total fatalities have increased during this same time.

Figure 2-9 provides more detailed information regarding the type, location, and causes of the train accidents over the past decade. "Other" accidents are the dominant type of rail incident in the state over of the past 10 years. "Other" rail accidents are any death, injury, or occupational illness of a railroad employee that is not the result of a "train accident" or "highway-rail incident." [12] In addition, most rail accidents occurred on yard tracks as opposed to mainline tracks.

Figure 2-9: Train Accident Type/Locations/Causes in Virginia (2006-2015)



Source: FRA Office of Safety Analysis and HDR

Highway-Rail At-Grade Crossing Safety in Virginia

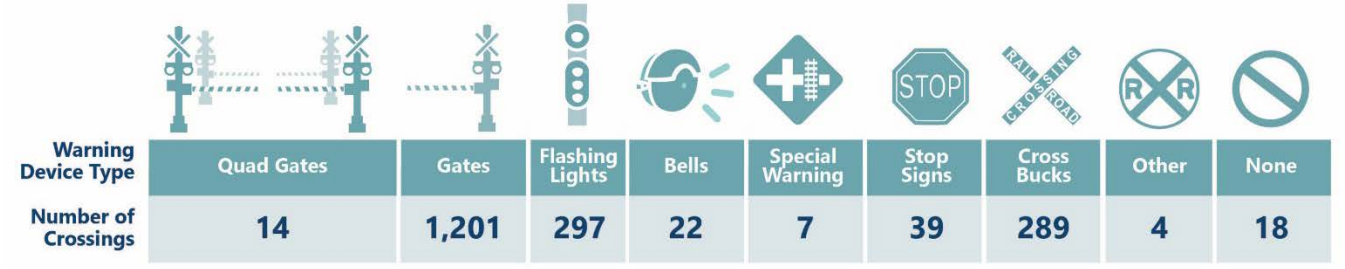
Crossing Protection in Virginia

According to FRA's inventory of at-grade crossings, there are approximately 1,891 public at-grade highway-rail crossings in Virginia. In addition, there are approximately 1,433 grade-separated crossings.[13] Public highway at-grade crossings in the state have various levels of grade crossing warning devices. **Figure 2-10** shows the type of warning equipment and the number of crossings equipped with each. The warning devices are shown in a decreasing order of warning effectiveness.

[12] Train accident is defined as, "collisions, derailments, fires, explosions, acts of God, or other events involving the operation of railroad on-track equipment (standing or moving) and causing reportable damages greater than the reporting threshold for the year in which the accident/incident occurred must be reported using Form FRA F 6180.54." The following link lists the reporting thresholds per year: https://safetydata.fra.dot.gov/OfficeofSafety/ProcessFile.aspx?doc=RAILROAD_REPORTING_THRESHOLD.doc

[13] FRA Crossing Inventory Data Query was run on October 27, 2016 for public, private, and grade separations.

Figure 2-10: Types of Warning Devices at Virginia Public At-Grade Crossings



Warning Device Type	Quad Gates	Gates	Flashing Lights	Bells	Special Warning	Stop Signs	Cross Bucks	Other	None
Number of Crossings	14	1,201	297	22	7	39	289	4	18

Source: FRA Office of Safety Analysis

These figures show that 81 percent of all public highway at-grade crossings in Virginia have some form of active warning devices, including special warning arrangements such as flagmen. The remaining 350 crossings, or 19 percent, have passive warnings, such as cross bucks or stop signs. Many of the crossings with passive warning systems have low volumes of roadway traffic and are rural in nature.

In addition to public at-grade crossings, there are approximately 2,751 private crossings in the state. Private crossings are outside the jurisdiction of VDOT and DRPT.

Positive Train Control

Positive Train Control (PTC) refers to technologies designed to automatically stop or slow a train before certain accidents can occur. PTC is designed to prevent collisions between trains, derailments caused by excessive speed, trains operating beyond their limits of authority, incursions by trains on tracks under repair, and by trains moving over switches left in the wrong position. PTC systems are designed to determine the location and speed of trains, warn train operators of potential problems, and take action if operators do not respond to a warning.

As required by the regulations, all rail operators hosting Amtrak service within Virginia, including any shortline railroad hosting Amtrak service, needs to be equipped with PTC. Class I railroads are currently developing PTC systems for their networks, which would include implementation of the technology on principal lines in Virginia.

Rail Security

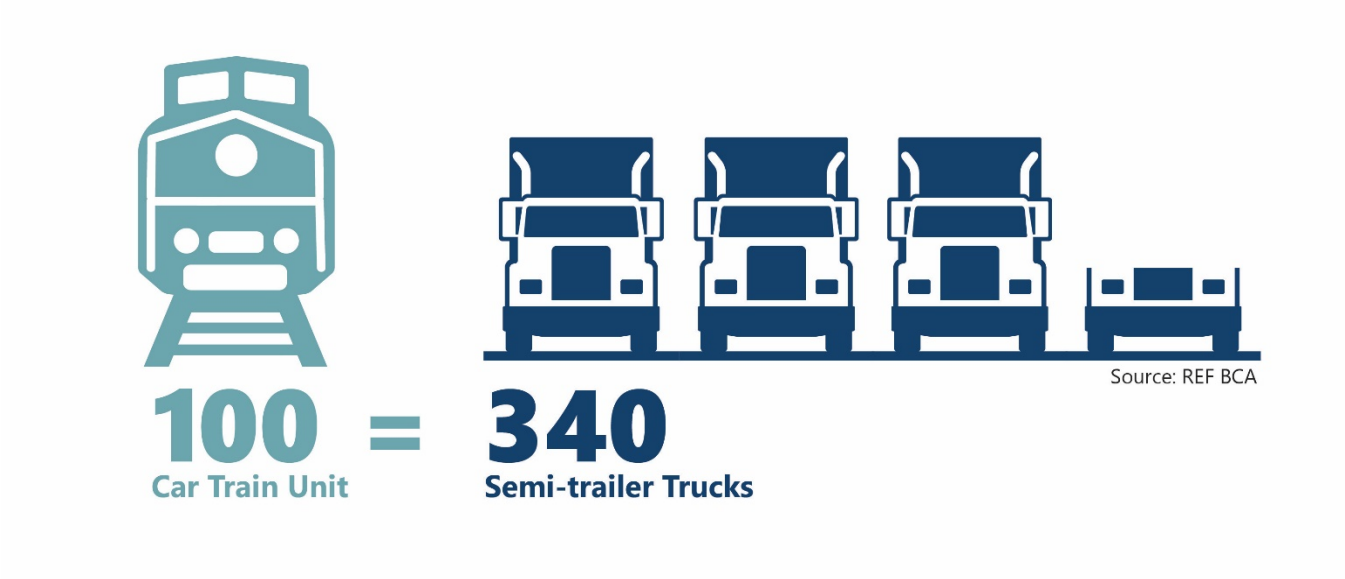
The primary agencies responsible for security related to transportation modes in Virginia are the U.S. Department of Homeland Security, Office of the Secretary of Public Safety and Homeland Security, Virginia's Department of Emergency Management, Virginia Emergency Response Council, Railroad Safety and Security Task Force, county emergency management coordinators, and local emergency planning committees (LEPCs). These agencies, in coordination with federal and state transportation agencies, have addressed transportation security largely through identifying critical infrastructure

assets, developing protection strategies for these assets, and developing emergency management plans.

2.1.7 Economic Impacts and Socio-Environmental Benefits

Rail transportation provides low-cost, high-capacity and low environmental impact solutions for the movement of people and goods, particularly as the travel distance increases. According to Hofstra University, one rail car typically has a cargo capacity of approximately 100 tons, which equates to a total capacity of 10,000 tons for a 100 car train unit. As illustrated in **Figure 2-11**, it would take 340 semi-trailer trucks to carry the same amount of freight as a 100 car train. The benefits of moving passengers and freight on the rail system include less congestion on highways, efficient fuel consumption, low greenhouse gas emissions, and an excellent safety record.

Figure 2-11: Rail and Truck Capacity Comparison (Equivalent Freight Units)



Economic Impacts of Freight and Passenger Rail

Rail economic impacts to Virginia are estimated using multipliers from the IMPLAN® economic model with input data and assumptions from freight movement data (via the STB Waybill Sample and IHS TRANSEARCH [2012], which are described in **Chapter 2.2.2** of the Virginia State Rail Plan) and passenger rail operations and visitor characteristics. Impacts of rail service-related spending in Virginia emanate from firms providing freight and passenger transport services, industries using such services to trade goods (shippers/receivers), and expenditures from visitors who reach Virginia via rail. Of these activities, freight-users generate the most significant impact.

Impacts are calculated and presented by activity (service provision and rail users), type (direct, indirect, induced, and total), and measure (employment, income, value added, output, and tax revenue) for FY 2015 to provide a comprehensive perspective on how rail in Virginia impacts the economy and are shown in **Table 2-11**.

- **Employment** – Economic impacts of rail extend beyond the 6,762 directly employed in the provision of rail transport (both passenger and freight). When the freight and visitor impact activities and multiplier impacts are included, rail-related employment in Virginia amounts to 341,519 jobs, which represent 6.7 percent of the 5.1 million jobs statewide.
- **Income** – $19.8 billion earned by these total employees represent 6.4 percent of Virginia's total labor income. Labor income includes employee compensation and proprietary income. Employee compensation, in turn, consists of wage and salary payments as well as benefits (health, retirement, etc.) and employer paid payroll taxes (employer side of social security, unemployment taxes, etc.). Proprietary income consists of payments received by self-employed individuals and unincorporated business owners.
- **Value Added** – The combined value added impact of rail services is over $30 billion and represents 6.0 percent of the state's Gross State Product (GSP).
- **Output** – In terms of total revenue, the rail industry generated about $72.9 billion in output, which is 8.8 percent of Virginia's total output.
- **Tax Revenue** – Federal, state and local tax revenues generated by the rail industry totaled $1.9 billion.

Table 2-11: Rail Economic Impacts in Virginia

Measure and Type	Transport Services			Transport Users			Total Services and Users		
	Pass.	Freight	Total Services	Pass.	Freight	Total Users	Pass.	Freight	Total
Employment[a]									
Direct	914	5,848	**6,762**	438	163,674	**164,111**	1,352	169,522	**170,873**
Total	2,344	14,999	**17,343**	1,123	323,054	**324,176**	3,467	338,052	**341,519**
Income[b]									
Direct	84.9	543.0	**627.9**	40.6	9,417.3	**9,457.9**	125.5	9,960.3	**10,085.8**
Total	168.4	1,077.4	**1,245.8**	80.6	18,502.8	**18,583.5**	249.0	19,580.2	**19,829.2**
Value Added[b]									

Measure and Type	Transport Services			Transport Users			Total Services and Users		
	Pass.	Freight	Total Services	Pass.	Freight	Total Users	Pass.	Freight	Total
Direct	146.6	937.9	**1,084.5**	70.2	12,999.8	**13,070.0**	216.8	13,937.7	**14,154.5**
Total	280.3	1,793.6	**2,074.0**	134.3	27,948.1	**28,082.4**	414.6	29,741.8	**30,156.4**
Output[b]									
Direct	320.1	2,047.8	**2,367.9**	153.3	42,193.1	**42,346.3**	473.3	44,240.9	**44,714.2**
Total	553.1	3,538.8	**4,091.9**	264.9	68,529.0	**68,793.9**	818.0	72,067.9	**72,885.8**
Tax Revenue[b]									
Direct	2.8	18.2	**21.1**	1.4	629.0	**630.4**	4.2	647.2	**651.4**
Total	12.8	82.2	**95.0**	6.2	1,805.3	**1,811.5**	19.0	1,887.5	**1,906.5**

Source: Amtrak, VRE, WAYBILL, IHS TRANSEARCH and IMPLAN

a Employment rounded to the nearest 10 job-years; totals may not sum due to rounding

b In millions of 2016 Dollars

The full description of economic impacts can be found in **Appendix F** and **Appendix G**.

Social-Environmental Benefits

The value of freight and passenger rail infrastructure and service can also be observed in the extent of economic benefits that are derived from rail use. In particular, rail use as compared to shipping goods by truck or traveling by passenger vehicles reduces external social and environmental impacts (i.e., "externalities"). Externalities, such as roadway congestion, air pollutant emissions, road crashes, and pavement damage, can be measured in monetary terms using standard economic methods and parameters. The magnitude of these benefits is driven by the numbers of truck and passenger vehicle miles avoided because of the availability of rail. In addition, since shipping costs for freight rail are lower than trucks, cost savings from rail use would translate into lower product costs, assuming that markets for such goods are competitive – a common assumption. The discussion below documents the estimation of rail ton-miles and passenger vehicle miles, and specific assumptions for each of the benefit categories.

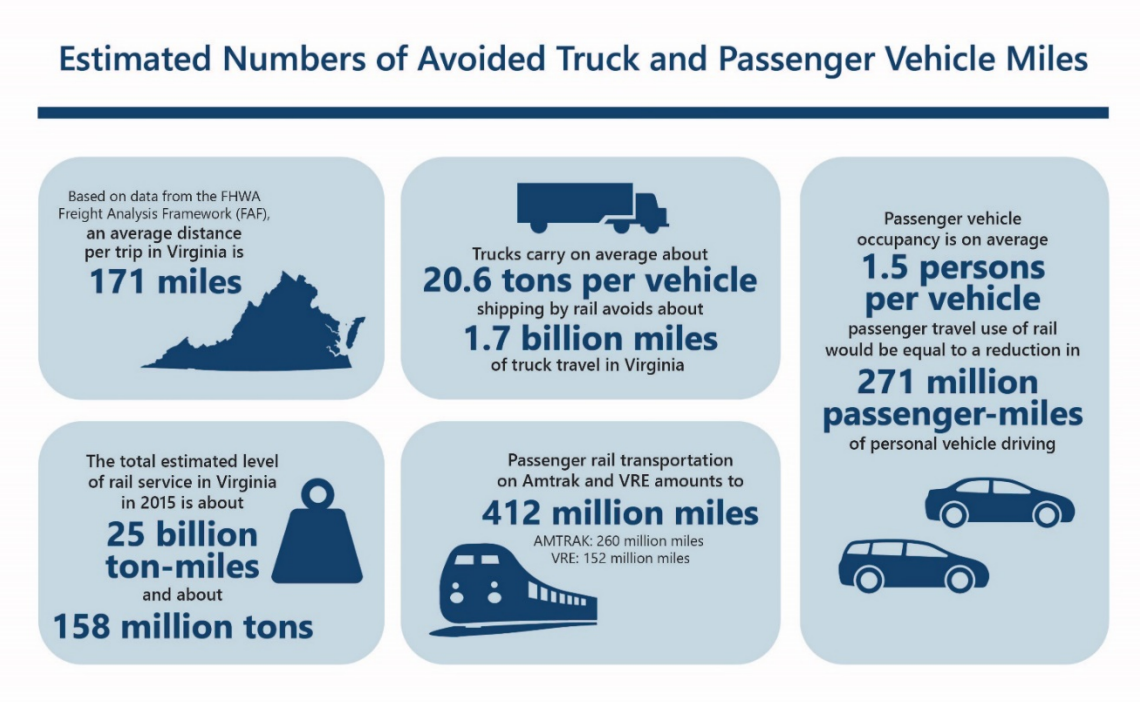
Estimated Numbers of Avoided Truck and Passenger Vehicle Miles

Benefits of freight and passenger rail use have been estimated for each of the major benefit categories based on the estimated number of miles of rail use that incurred in Virginia. Estimated freight rail miles are derived from IHS TRANSEARCH (2012) data, as provided by VDOT. These data include the origins and destinations of shipments that travel to, from, within, and through Virginia. From these data, DRPT

computed a total number of freight miles and freight-ton miles that occurred in Virginia. For trips that begin and end in Virginia, the estimated mileage is straightforward. For other trips including those that travel to, from and through Virginia, the portion of these trips that only occurs in Virginia must be estimated from existing data. The high-level approximation for estimating Virginia-only miles relies on an average distance per trip that is traveled in the Commonwealth, which is applied to all trips independent of actual origin, destination, or route through Virginia. Based on data from the FHWA Freight Analysis Framework (FAF), an average distance per trip in Virginia is 171 miles. Using these data, the total estimated level of rail service in Virginia in 2015 is about 25 billion ton-miles and about 158 million tons. Assuming that trucks carry on average about 20.6 tons per vehicle, shipping by rail avoids about 1.7 billion miles of truck travel in Virginia (**Figure 2-12**).

Passenger rail transportation on Amtrak and VRE amounts to 412 million passenger-miles. This sum includes about 260 million passenger-miles on Amtrak and another 152 million passenger-miles on VRE. Since passenger vehicle occupancy is on average about 1.5 persons per vehicle, passenger travel use of rail in Virginia is equivalent to a reduction in 271 million miles of personal vehicle driving (**Figure 2-12**).

Figure 2-12: Estimated Numbers of Avoided Truck and Passenger Vehicle Miles



Estimated benefits for freight and passenger services are presented in **Table 2-12.** Rail use benefits are largely derived from savings from diverting freight and passengers from highways to rail. The results

indicate that more than $2.2 billion (2016 dollars) in annual benefits are generated from freight service to, from, within and through the Commonwealth. The largest benefits are user (shipper) cost savings, at an estimated $1.6 billion (2016 dollars). This category represents over 70 percent of all benefits. Other sources of benefits generate a total of $0.6 billion annually. Altogether, freight service benefits amount to about $0.09 (9 cents) per ton-mile of rail use.

In addition, passenger services annually generate nearly $190 million (2016 dollars) in benefits of avoided passenger vehicle use. The largest of these benefits are user cost savings (e.g., savings resulting from diverting from automobile to rail). In addition, congestion savings and crash reduction benefits generate over $60 million and $28 million annually (2016 dollars), respectively. Overall, the Commonwealth gains about $0.46 (46 cents) in avoided vehicle use benefits for every mile of rail service used by passengers.

Table 2-12: Estimated Benefits of Freight and Passenger Use, by Benefit Category

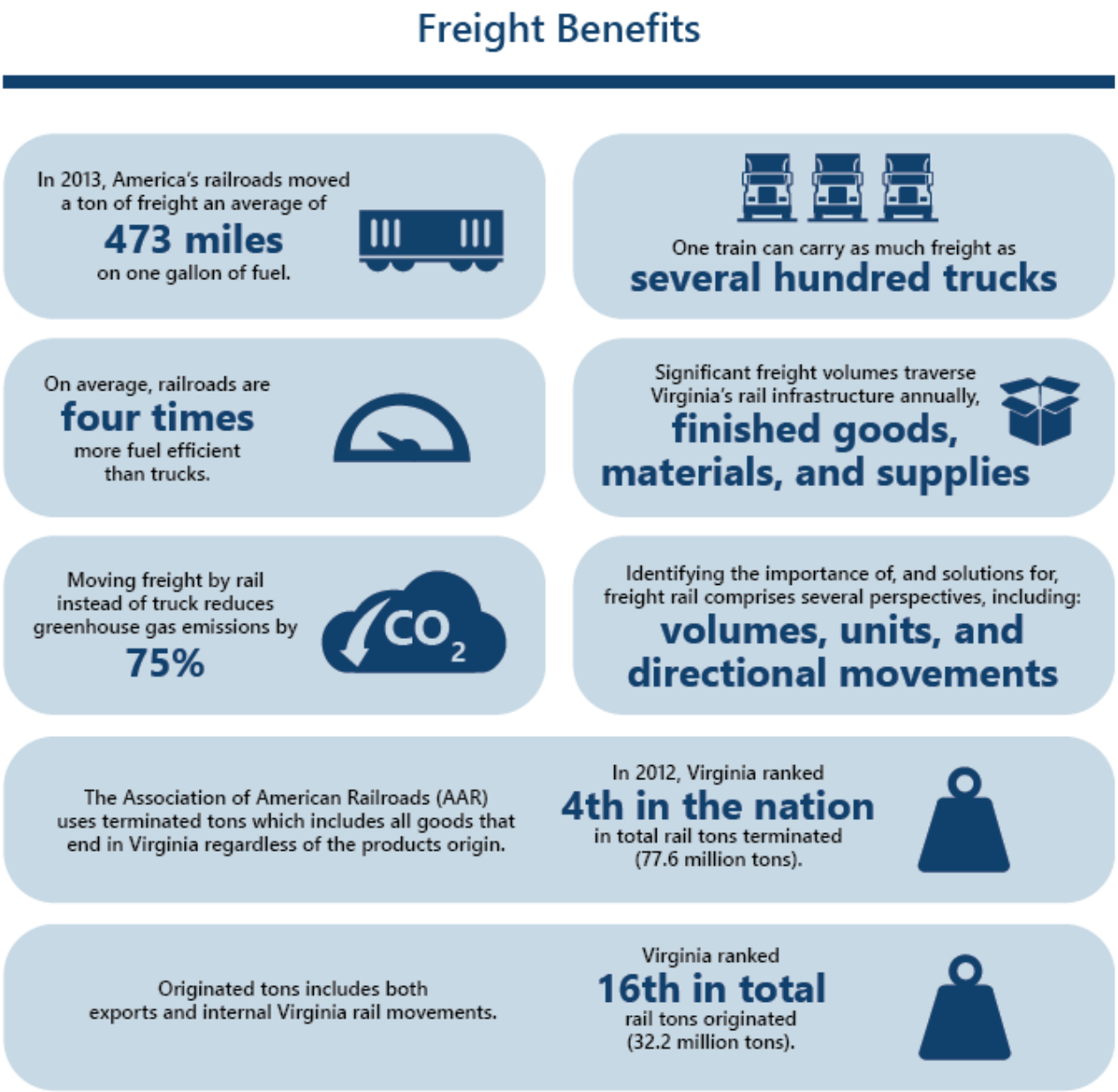
Freight Benefit Categories	Total Freight Service Benefits[a]	Freight Service Benefits per Thousand Ton Miles[b]
Millions of Rail Ton Miles in VA		25,107
User Cost Savings	$1,635.5	$65.2
Pavement Savings	$122.8	$4.9
Congestion Savings	$251.1	$10.0
Truck Emissions	$158.3	$6.3
Truck Crash Reduction	$71.2	$2.8
Total	**$2,239.0**	**$89.3**
Passenger Benefit Categories	**Total Passenger Service Benefits[a]**	**Passenger Service Benefits per Thousand Passenger Miles[b]**
Millions of Passenger Rail Miles in VA		411.9
User Cost Savings	$95.9	$232.9
Pavement Savings	$0.5	$1.2
Congestion Savings	$60.9	$147.9
Auto Emissions	$4.0	$9.7
Auto Safety	$28.4	$68.9
Total	**$189.7**	**$460.6**

Notes:
a In millions of 2016 Dollars
b In 2016 Dollars per 000 Passenger Miles

Additionally, the benefits of rail on freight movement are shown in **Figure 2-13**. In 2013, America's railroads moved a ton of freight an average of 473 miles on one gallon of fuel. That is the approximate distance between Richmond, Virginia, and Lexington, Kentucky. On average, railroads are four times more fuel efficient than trucks. Moving freight by rail instead of truck reduces greenhouse gas emissions by 75 percent. One train can carry as much freight as several hundred trucks. Significant freight volumes traverse Virginia's rail infrastructure annually. Such freight includes finished goods, materials, and supplies.

Methodology for calculating freight and passenger benefits is included as **Appendix H.**

Figure 2-13: Freight Benefits



2.2 Trends and Forecasts

Trends which impact both passenger and freight rail include factors such as demographic and economic growth, freight and passenger transportation changes, congestion to all transportation modes, and changes in future state land use. These factors all contribute to the projected demand and growth for both passenger and freight, although many of these factors are difficult to incorporate into demand forecasting. The following discussion provides a base for determining future rail service needs in Virginia and identifies areas of the state's future economy that will be transportation dependent.

2.2.1 Demographic and Economic Growth Factors

Population

The estimated population for Virginia in 2016 was 8,411,808, placing Virginia 12th among all states. Since the last U.S. Census population count in 2010, Virginia's estimated population has increased by 4.8 percent, which is just over the 4.4 percent population growth rate for the U.S. as a whole. Since 2000, Virginia grew by 18.8 percent, the 15th fastest rate in the country, reflecting the fact that the growth in the region has been somewhat faster when compared with other portions of the country. Virginia's growth was higher than the country's overall 14.8 percent growth in population, indicating that Virginia is adding slightly more population than other states in the country[14].

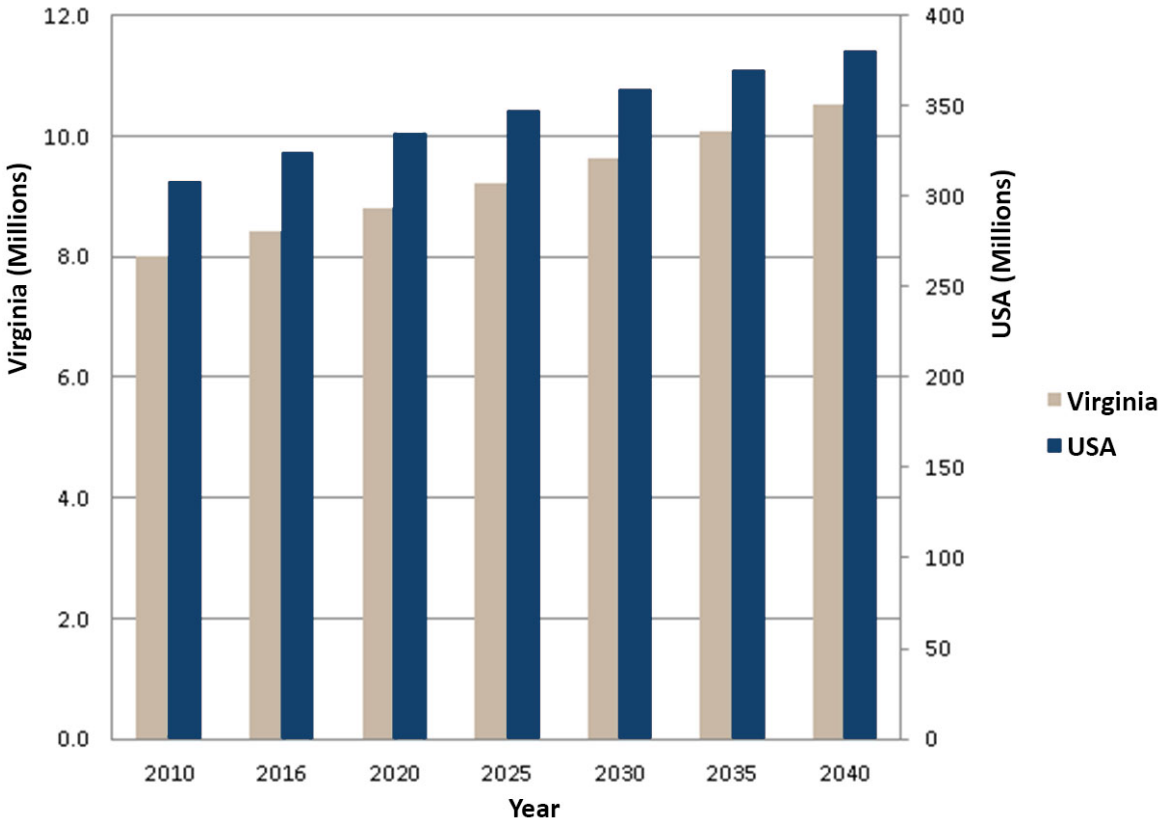
The primary areas of this growth are along the urban crescent, from Northern Virginia south along Interstate 95 to Richmond (the Washington, D.C. to North Carolina Corridor) and east along Interstate 64 (the East-West Corridor) to Hampton Roads. The growth in these areas is largely driven by millennials. While overall state growth has increased and is expected to continue to increase, the Eastern Shore and southwest Virginia have experienced a decrease in population growth as populations continue to move northward to the growing urban centers, with the exception of the cities of Roanoke, Charlottesville, and Lynchburg.

Population projections indicate that between 2010 and 2040, the state's population is projected to increase by more than 31 percent, reaching a total of nearly 10.5 million people. Compared to an estimated 23.1 percent growth for the U.S., Virginia's projected growth indicates that the state will stay ahead of most of the country in terms of attracting more people. **Figure 2-14** shows the projected

[14] Population data from the U.S. Census Bureau

population estimates for both Virginia and the U.S.[15] VTrans 2040 population trends report further details the forecasted changes in growth and population, and the factors influencing the changes.[16]

Figure 2-14: Virginia and U.S. Future Population Estimates



EMPLOYMENT

The most current wage and salary employment (i.e., base employment) figures from the Bureau of Economic Analysis (BEA) indicate that around 3.85 million people were employed in Virginia in 2015. This data excludes farm and nonfarm proprietors' employment information.

Virginia Labor Market Information produces employment growth projections based on 2014 employment estimates from the Current Population Survey. According to their long-term projections,

[15] Population forecast based on U.S. Census Bureau population estimates. Virginia population projections are provided by the University of Virginia, Weldon Cooper Center for Public Service. Virginia projections in years 2025 and 2035 are interpolated from other data points provided.

[16] *VTrans 2040 Trends Assessment Technical Report: How Will Virginia Age and Grow by 2040?* Updated March 15, 2015. http://vtrans.org/resources/VTransTrends_Demographic_Changes.pdf.

base employment will increase to about 4.3 million by 2024, an annual growth rate of 0.89 percent from the 2014 employment estimates[17]. Applying this growth rate to 2016 employment estimates from the Bureau of Labor Statistics (BLS), it is estimated that the state's base employment could reach about 5 million jobs in year 2040 (an increase of 28 percent)[18]. This employment growth will occur primarily in the public administration and professional and business services sectors, with education/health care and retail trade as the next largest industry employers. Employment growth will largely occur in the State's population growth centers of Richmond, Hampton Roads, and Northern Virginia along the East-West Corridor and Washington, D.C. to North Carolina Corridor.

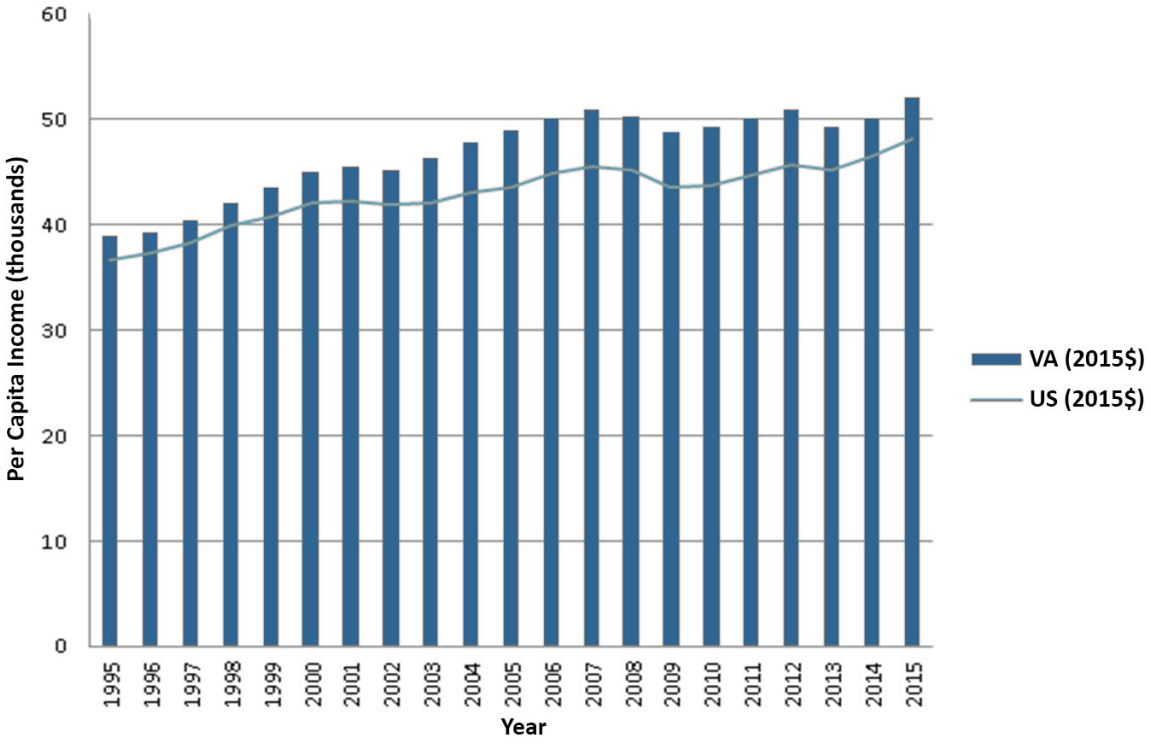
As of June 2016, Virginia is home to 21 Fortune 500 companies, including: Freddie Mac, a mortgage loan company; General Dynamics, a global aerospace and defense company; and Capital One Financial, a credit card service company. According to the BEA, Virginia's gross domestic product (GDP) has increased by 14.3 percent since 2010, which is the 38th highest rate in the country. Companies in Virginia have continued to increase economic development in the state both in the population centers as well as the state's ports.

PERSONAL INCOME

Virginia's per capita personal income in 2015 was $52,052, which ranks 11th within the U.S., and is 8 percent higher than the national average in that year ($48,112)[19]. In continuous 2015 dollars (adjusted for inflation using the Consumer Price Index from the BLS), the per capita personal income since 1995 has grown by 33.7 percent, just above the national income growth of 31.3 percent. Overall, Virginia's per capita income has remained above the national average since the 1970s. However, in terms of annual growth, Virginia tracks consistently with the nation, including declines in income levels experienced during and after the recent recession. The recent income growth in Virginia can probably be attributed to the local and national economy's recovery from the recession, demonstrated by the GSP gains since 2011 and steadily decreasing unemployment rate. Historical per capita personal income from 1995 to 2015 is shown in **Figure 2-15**[20].

[17] Virginia Labor Market Information (VA LMI), Long-term Industry Projections uses 2014 employment estimates from the Current Population Survey, which is produced by the BLS and the U.S. Census.
[18] Compound annual growth rate was calculated from VA LMI projections and applied to current BLS data. Base estimates are also taken from different surveys, thus the base and projection estimates vary from VA LMI data.
[19] Bureau of Economic Analysis
[20] Bureau of Economic Analysis, adjusted by the national CPI into 2015 U.S. dollars.

Figure 2-15: Historical Per Capita Personal Income (2015 U.S. $)



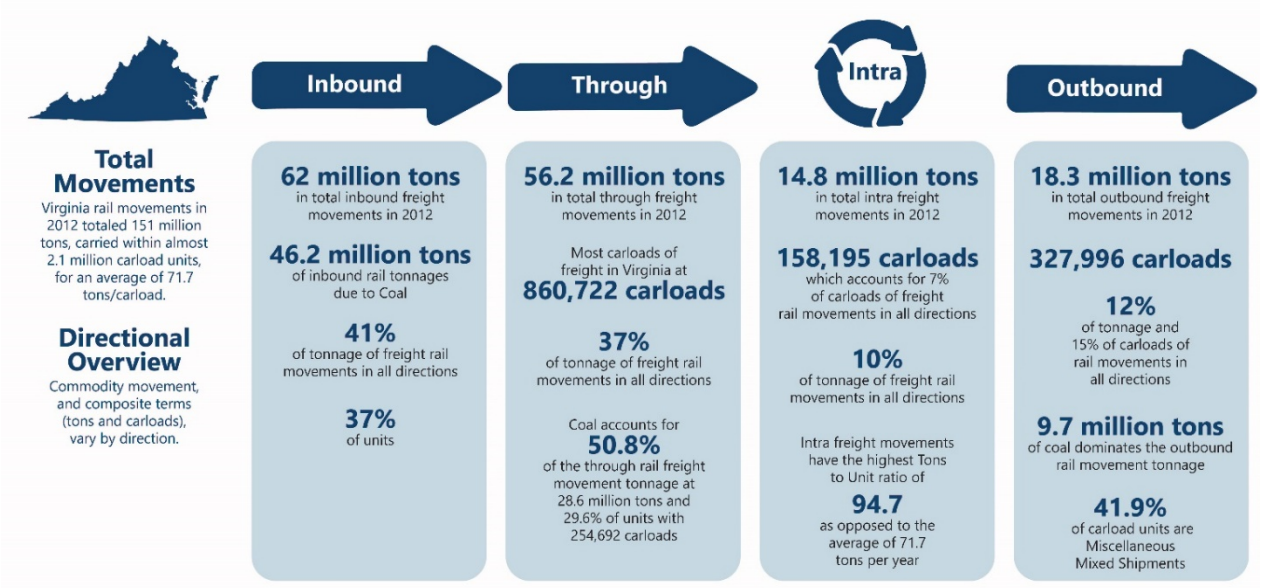
Industrial Outlook by Sector

The Mining and Extraction industry sector is expected to retain its current dominance, in terms of tonnage of freight carried on Virginia's network, particularly along the CSX Coal Corridor, NS Heartland Corridor and through the State's ports, but is not projected to grow between 2012 and 2040. The lack of growth in this sector, particularly coal, could result in a decrease in volumes of freight along the CSX Coal Corridor and NS Heartland Corridor. In contrast, the Agricultural and Manufacturing industry sectors are expected to nearly double their tonnage in all freight movements between 2012 and 2040. These issues are discussed in more depth in the next chapter of the report and **Appendix I**.

2.2.2 Freight Demand and Growth

Virginia freight rail flows move in different directions and have origins and destinations that vary by commodity shipped. **Figure 2-16** summarizes major commodity movements by direction. A detailed assessment of freight demand and growth is in **Appendix I**.

Figure 2-16: Major Commodity Movements by Direction



2.2.3 Passenger Travel Demand and Growth

Travel Demand – Highways

Projections for travel demand within and to/from Virginia will continue to grow in the future. The estimated growth in vehicular travel demand for Virginia, exhibited in Vehicle Miles Traveled (VMT), is shown in **Table 2-13**.

Table 2-13: Estimated VMT on VDOT Roadways by Classification

Functional Class#	Lane-Miles	Annual VMT (in thousands)^		Growth in VMT (in thousands)	% Growth
		2014	2035*		
Interstate	1,118	24,483,735	41,016,676	16,532,941	67.5%
Primary	8,444	33,852,829	56,712,365	22,859,536	67.5%
Secondary	48,305	22,648,072	37,941,459	15,293,387	67.5%
Total	**57,867**	**80,984,636**	**135,670,500**	**54,685,864**	**67.5%**

Source: VDOT Miles of Public Roads in Virginia by Functional Class

^ VMT describes the level of travel demand on a roadway system, and growth in VMT is a strong indicator of growth in travel demand. VMT is a weighted measure of travel, and it is calculated by multiplying the number of vehicles on a roadway segment by its length. Thus, an increase could be correlated to either increases in the number of vehicles or trip lengths, both of which are growth-related.

 # VMT is shown for years 2014 and 2035 by functional class. These classifications are used to define roadway types and their primary uses for roadway users.

** Virginia Transportation Research Council (VTRC) estimates a daily VMT of 371.7 million in 2035; however, it does not provide estimates by functional class. Estimates for 2035 by Functional Class were estimated using VMT proportion from 2014.*

Overall vehicle travel is forecasted to grow by 67.5 percent from around 221.8 million daily VMT (81 billion VMT annually) to around 371.7 million daily VMT (135.7 billion VMT annually) in the Commonwealth. In terms of a general trend, it can be expected that travel, particularly on state and federal highways, will increase as the population grows and overall economy expands. The increases in highway travel will align with population and economic growth centers in Northern Virginia, Richmond, and Hampton Roads and along the East-West Corridor and Washington, D.C. to North Carolina Corridor.

Travel Demand – Air Travel

The Virginia Air Transportation System Plan (VATSP) developed by the Virginia Department of Aviation and last revised in 2016 anticipates a total of approximately 35.0 million enplanements in 2030 and 40.8 million enplanements in 2037 for all commercial service airports. The study projects an average annual growth rate of 2.1 percent between 2012 and 2037 for total enplanements.

Forecasts from the Federal Aviation Administration (FAA) enplanements for Virginia are projected to be very similar, with an average annual growth rate of 2.2 percent for the same period. The FAA projects total enplanements in Virginia commercial service airports to be approximately 42.3 million in 2037, about 2 million more than the VATSP forecast, but roughly equivalent considering overall prediction uncertainties. VATSP projected that based aircraft[21] would rise from 3,828 in 2012 to 4,946 in 2037. More detail on air travel is included in **Chapter 2.2.6**.

Travel Demand – Intercity Rail

Station ridership changes are calculated based upon the growth rate of each county or independent city served by the station. [22] It is important to note that the actual future ridership performance will be based not only on population growth, but also by changes in income, changes in the number of train frequencies and train schedule times at the station (day vs. night), changes in Amtrak fares vs. other modes, and changes in the quality of Amtrak service (i.e., on-time performance).

Population around Virginia's Amtrak stations is anticipated to grow 20 percent from 2016 to 2040. The strongest growth is likely to occur near Woodbridge, Quantico, Fredericksburg, Culpeper, and Alexandria along the Washington, D.C. to North Carolina, Northern Virginia, and Seminole Corridors. A

[21] The FAA defines a "based aircraft" as an aircraft that is operational and air worthy, which is based at a specific facility for a majority of the year. Based aircraft estimates are combined for Virginia's Commercial Service and General Aviation Airports.
[22] County and independent city population projections are obtained from the Weldon Cooper Center for Public Service Demographics Research Group, University of Virginia website.

decline in usage is predicted for Clifton Forge (East-West Corridor), Danville (Seminole Corridor), and Petersburg (Washington, D.C. to North Carolina Corridor) as a result of projected negative population growth trends near these stations.

Table 2-14 shows FY 2016 boardings and alightings at Virginia's twenty intercity rail stations, as well as the forecasts for FY 2040. These projections are based on population growth rates in these cities between FY 2016 and FY 2040.

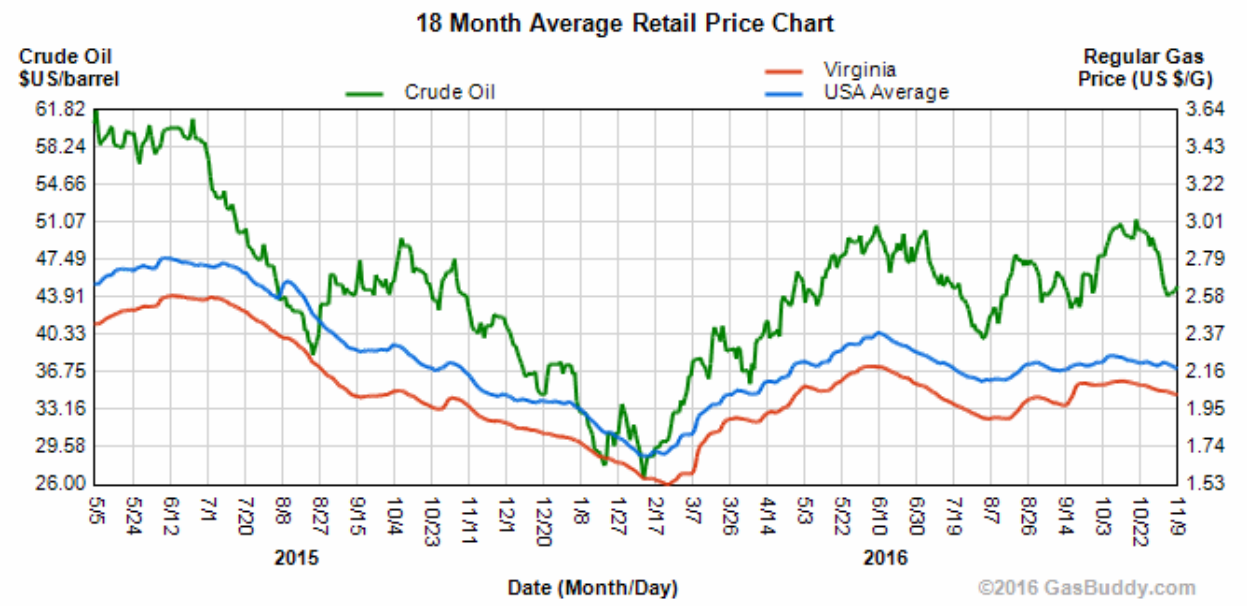
Table 2-14: Virginia's Intercity Rail Stations Boardings and Alightings

City	FY 2016	FY 2040	Change Over Period	Annual Change
Alexandria	190,185	253,345	34.81%	1.20%
Ashland	28,075	34,207	22.85%	0.83%
Burke Centre	9,101	10,783	19.32%	0.71%
Charlottesville	141,827	162,358	15.12%	0.56%
Clifton Forge	2,401	1,911	-21.17%	-0.95%
Culpeper	15,088	20,870	40.21%	1.36%
Danville	7,209	5,685	-21.92%	-0.98%
Fredericksburg	120,275	170,496	43.83%	1.46%
Lorton (Auto Train)	238,448	282,507	19.32%	0.71%
Lynchburg	82,786	100,869	22.85%	0.83%
Manassas	27,597	34,430	25.92%	0.93%
Newport News	107,894	108,665	0.74%	0.03%
Norfolk	44,316	46,606	5.39%	0.21%
Petersburg	30,060	26,953	-10.74%	-0.45%
Quantico	25,474	38,514	53.81%	1.74%
Richmond - Main Street	42,702	48,828	14.99%	0.56%
Richmond - Staples Mill	356,189	407,288	14.99%	0.56%
Staunton	6,250	6,470	3.67%	0.14%
Williamsburg	59,677	75,106	27.07%	0.96%
Woodbridge	17,456	26,391	53.81%	1.74%
Total Virginia Station Usage	**1,553,010**	**1,862,283**	**19.91%**	**0.76%**

2.2.4 Fuel Cost Trends

Fuel costs are a factor in the passenger rail ridership and movement of freight via rail lines. As fuel costs trend upwards, more people utilize passenger rail service and the movement of freight goods transitions from vehicular trucks to railcars. Trends in fuel costs (crude oil and regular gasoline) between May 2015 and November 2016 are shown in **Figure 2-17**. The average retail price of gasoline in Virginia has remained considerably lower than the U.S. average during this 18-month period.

Figure 2-17: Month Fuel Price Trends



Source: GasBuddy.com

Ultra-low sulfur diesel fuel costs over the past 7 years for the Lower Atlantic Petroleum Administration for Defense District (PADD 1C) have also not varied substantially from the nationwide average, according to the U.S. Energy Information Administration (EIA). The cost of diesel averaged $2.67 per gallon in FY 2015 in the Lower Atlantic region. The cost of diesel declined in FY 2016, averaging $2.21 per gallon from January through October of 2016, reaching a low point of $1.96 per gallon in February 2016.

2.2.5 Rail Congestion Trends

Congestion is often caused by bottlenecks, which exist throughout Virginia's railroad network. Bottlenecks constrain railroad operating capacity, efficiency, velocity, and safety, as well as freight mobility. Typical bottlenecks in the state include:

- Insufficient capacity on main tracks and in terminals and rail yards to accommodate present and future train volumes, interchange of traffic between railroads, commuter and passenger trains, and provision of rail switching;
- Operating delays at railroad junctions and at movable bridge spans over principal navigable waterways;
- Bridges and tunnels that constrain vertical and horizontal clearances and restrict the types of rail car equipment that can be accommodated; and,
- Potential effects on infrastructure and service for rail lines located in a major floodplain.

Virginia rail network bottlenecks, as identified and described by the Office of Intermodal Planning and Investment, through its 2015 VTrans Multimodal Transportation Plan (VMTP) 2025 Needs Assessment, as well as bottlenecks that were identified and described by Virginia's railroads during outreach conducted for the Virginia State Rail Plan, are identified and described in **Appendix J**. The bottlenecks include the Northern Virginia region, Crescent Corridor, East-West Corridor, Washington, D.C. to North Carolina Corridor, Richmond, Southside Corridor, and the North-South CSX lines and NS Heartland Corridor in the Tri-Cities region.

2.2.6 Highway and Airport Trends

Highway Congestion

According to VDOT, as of 2016, the State has 57,867 miles of state-maintained roadway. Of these, around 1.9 percent are interstate highways (four-to-ten lane highways that connect states and major cities), 14.6 percent are primary roads (two-to-six lane roads that connect cities and towns with each other and with interstates including 333 miles of frontage roads), and 83.5 percent are secondary roads (local connector or county roads). A separate roadway system includes 10,561 miles of urban streets that are maintained by cities and towns with the assistance of state funds. Additionally, Henrico County (1,279 miles) and Arlington County (359 miles) maintain their own roads with VDOT funds. There are an additional 39 miles of toll roads that are maintained by other entities.

The vast majority of non-interstates currently perform very well according to VDOT, balancing the economics of roadway design while continuing to maximize traffic flows. Only 173 miles, or 0.6 percent of identified roadways, fall into Level of Service (LOS) F within the Commonwealth, primarily in Northern Virginia. VDOT projected highway volumes and level of service to year 2025 for their roadways. A comparison between current and future 2025 conditions is presented in **Appendix K**. According to VDOT data, the 2025 roadway network is largely expected to remain the same, with only a limited amount of new roadway construction, for a network mileage total of 27,476 miles. Conditions in year 2025 are projected to worsen slightly, as an estimated 1,569 additional miles of Virginia highways and interstates would experience LOS D through F conditions.

Airport Congestion

There are nine commercial service airports and 59 general aviation airports in Virginia. According to the VATSP Update, "More than 97 percent of the Commonwealth's population has convenient access to one of Virginia's airports and provides the flying public with access to the global marketplace."

Virginia's nine commercial airports appear in **Table 2-15**, along with their known passengers and pounds of cargo enplaned and deplaned. Together, both Washington-Reagan and Washington-Dulles airports contribute the majority of passenger and freight movement in Virginia.

Table 2-15: Virginia Commercial Airport Activity

	2014	
Airport	**Passengers**	**Cargo (Pounds)**
Charlottesville	470,562	0
Lynchburg	78,876*	Unknown
Newport News	524,518	Unknown
Norfolk	2,965,306	55,637,623
Richmond	3,352,651	116,566,430
Roanoke	601,434	25,100,114
Shenandoah Valley	9,422*	Unknown
Washington – Dulles	21,572,233	592,510,700
Washington – Reagan	20,810,387	4,676,005
Total	**50,385,389****	**794,490,872*****

Source: Virginia Airport Websites – Traffic Summary Reports
Notes:
**Figure includes enplanement data only. Deplanement data not known.*
***Total does not include deplanements at Lynchburg and Shenandoah Valley airports.*
****Total does not include cargo (if any) at Lynchburg, Newport News, and Shenandoah Valley airports*

Historical data related to passenger and freight activity at Virginia's commercial airports for the last 10 years was not available for the development of the Virginia State Rail Plan.

2.2.7 Land Use Trends

Of all of the development that has occurred in Virginia over the past 400 years, more than a quarter of it has taken place just in the last 15 years.[23] Virginia lost over 112,100 acres of forest, farm, and other rural land to development between 2007 and 2012 alone. Many of the State's MPOs predict a population increase between now and 2040.

[23] Source: Virginia Performs http://vaperforms.virginia.gov/indicators/naturalResources/landPreservation.php

Virginia has been making a concerted effort to conserve land and support its past agrarian economy. Today, its top three agricultural farm products are leaf tobacco, tomatoes, and apples. Counting the combined efforts of private and public entities, an average of 67,413 acres per year were protected from development in Virginia between 2007 and 2016. Between 2007 and 2010 alone, 387,103 acres were placed under protection. As of August 2016, an additional 287,025 acres have been preserved.

In all, 8.2 million acres of Virginia's total land acreage of 25.3 million in 2016, or 32.4 percent, is rural farm land.[24]

2.3 Rail Service Needs and Opportunities

Virginia's passenger and freight rail network is an important asset for the Commonwealth, and a good investment for Virginia. Rail provides an efficient means of moving freight and passengers both within and through the state. By diverting traffic from road to rail, Virginia's rail network reduces congestion, saves lives, improves air quality, helps grow the economy, and complements the Virginia highway network while reducing capital and maintenance expenditures.

Passenger trips to, from, and within Virginia are growing and highways in Virginia are increasingly congested. Passenger rail service provides an alternative to congested highways, and the Commonwealth therefore invests in Amtrak intercity passenger routes, as well as VRE commuter service to improve mobility and meet the growing demand for travel. Projects and plans underway in CSX's RF&P subdivision and the Long Bridge across the Potomac to Washington, D.C. will alleviate existing rail bottlenecks to better connect the entire Southeast region with Amtrak's Northeast Corridor.

Since 2013 Virginia has provided dedicated funding to support and expand intercity passenger rail operations across the state. Virginia's busiest passenger rail routes parallel the heavily traveled I-95 corridor, where a growing number of Virginia regional service Amtrak trains serve Richmond, Newport News, and Norfolk. Additional Virginia regional Amtrak services extend southwest from Washington, D.C. to Lynchburg and Roanoke.

As the economy grows, so do the freight demands on Virginia's highways. The Commonwealth recognizes the public benefits and economic impact of investments in a multimodal freight transportation system. The freight rail network has a unique role supporting the Port of Virginia's target markets in the Midwest. Both CSX and NS have intermodal rail corridors that connect Virginia

[24] Source: http://www.vdacs.virginia.gov/markets-and-finance-agriculture-facts-and-figures.shtml

to the nation, providing a cost-effective way to bring needed raw materials and products to our ports, manufacturers, and consumers, and to carry Virginia-made products and materials to destinations throughout the nation.

Virginia's passenger and freight rail networks are affected by many external factors that drive demand for services. Freight rail corridors serving the Port of Virginia and the main north-south freight routes are experiencing growth in intermodal traffic, while changes in domestic energy production and use are reflected in a decrease in coal traffic. Population growth, an aging population and increasing highway congestion along the "urban crescent" between Washington, D.C. and Hampton Roads is helping drive demand for environmentally friendly and safe alternatives to automobile travel.

VTrans2040 provides a planning framework for all transportation modes in the state, including rail and public transit. Virginians will benefit from a sustainable reliable transportation system that advances Virginia businesses, attracts a 21st century workforce, and promotes healthy communities where Virginians of all ages and abilities can thrive.

To facilitate rail service needs and opportunities, the Commonwealth is prioritizing investments and improvements on the Crescent Corridor, East-West Corridor, Heartland Corridor, Washington to North Carolina Corridor, at the Port of Virginia, and on Virginia's shortline railroads. The significance of these routes, and the types of investments identified for them, are detailed below.

Crescent Corridor

Background – The 2,500-mile Crescent Corridor spans 11 states, from New York to Louisiana and Tennessee. In Virginia it includes NS track parallel to I-81 (Winchester-Roanoke-Bristol) and a second route parallel to U.S. 29 (Front Royal-Manassas-Lynchburg-Danville). The Crescent Corridor is a primary freight route for intermodal traffic moving through Virginia. The corridor also carries both Amtrak long distance trains (Crescent and Cardinal) and Virginia-supported regional passenger service connecting Roanoke, Lynchburg, and Charlottesville to Washington, D.C. and the Northeast Corridor. The corridor connects to NS's Heartland Corridor in Roanoke and Altavista.

Significance – The Crescent Corridor makes several vital connections to Virginia shortline railroads, including the W&W, CHW, BB, and SV railroads. In addition, the corridor connects to the VIP. Maintaining a seamless connection between this mainline freight route and these critical elements of the regional freight network is vital to the success of this corridor and regional economic development. NS estimates the Crescent Corridor keeps 1.3 million long distance trucks off the highways.

Projects – Priority projects include expanded passenger service to Lynchburg and Roanoke, and improving capacity and connectivity with shortline railroads and the VIP. Longer term considerations for this corridor include adding passenger service to southwest Virginia.

East-West Corridor

Background – The East-West Corridor parallels I-64 from Hampton Roads through Richmond to Clifton Forge. It serves as CSX's primary coal route from Appalachian coalfields to U.S. power plants and export terminals in Newport News. Loaded coal trains travel east on CSX's James River line, while empty trains return on the Buckingham Branch. The corridor handles Virginia-supported regional passenger service from Newport News, ultimately making connections to Washington, D.C. and Amtrak's NEC. Additionally, the Buckingham Branch carries the Amtrak long distance Cardinal route with connections to the Midwest and NEC.

Significance – The East-West Corridor serves primarily as a coal route, however, coal traffic has significantly dropped in response to recent changes in energy trends and a decline in demand for Appalachian coal. As a result, one of the primary drivers of investment is to maintain operability of the multiple passenger rail services.

Projects – Priority projects includes maintaining a state of good repair, particularly on the BB, and supporting existing passenger services, including a new station in Newport News and bottleneck relief in Richmond. Longer term considerations include expansion of passenger services between Richmond and Charlottesville.

Heartland Corridor

Background – The Heartland Corridor is a primary freight route for intermodal traffic traveling between the Port of Virginia terminals in Norfolk and midwestern markets, including Columbus and Chicago. The Heartland Corridor also carries Virginia-supported passenger trains between Norfolk and Petersburg, as well as a new service extension between Lynchburg and Roanoke. Both services ultimately connect to Washington, D.C. and the Northeast Corridor. The Heartland Corridor connects to the Crescent Corridor in Roanoke and Altavista.

Significance – Through significant previous investment, the corridor is cleared for double-stack container service from the Port, through Virginia, to Chicago. Tight timetables and high demand for on-time performance are critical needs to adequately serve intermodal customers. It is critical to eliminate any congestion points, particularly conflicts with passenger services, on this dense intermodal corridor.

Projects – Priority improvements include adding two additional round-trip passenger trains to Norfolk by extending two existing trains from Richmond. Longer term initiatives include the study of additional and/or higher speed passenger services to Hampton Roads and making critical east-west multimodal connections.

Washington to North Carolina Corridor

Background – Virginia's Washington to North Carolina Corridor is served by two CSX rail corridors: CSX's I-95 Corridor between New York and Jacksonville, and CSX's National Gateway Corridor linking mid-Atlantic ports with the Midwest. The two rail corridors share one alignment that parallels I-95 from Washington, D.C., through Richmond to Petersburg and the south. This corridor also serves as a primary passenger rail route. Amtrak Virginia-supported regional trains from the NEC and Washington, D.C. operate on the line to reach terminals in Richmond, Newport News, and Norfolk, while Amtrak long-distance trains from New York and Lorton, Virginia, continue farther south to Savannah, Sanford, Florida, and Miami. VRE Fredericksburg Line commuter trains also use the corridor from Spotsylvania County north to Washington, joined at Alexandria by Manassas Line commuter trains.

Significance – The Washington to North Carolina Corridor is the most heavily used corridor in Virginia, with increasing freight, regional and long distance passenger rail, and commuter rail services. The corridor also provides another rail link between the Port of Virginia and the Midwest, which previous Commonwealth investments have helped to clear for double-stack container service. The corridor has the most severe bottlenecks on the freight rail network, specifically across the Potomac River, where a four track system merges to just two tracks (the Long Bridge) to cross from Virginia into Washington, D.C.

Similarly, the parallel highway facilities, I-95 and US 1, are the most heavily used highway facilities with the most severe congestion in Virginia. As a result, capacity on the Washington to North Carolina Corridor must be preserved and improved in order to provide adequate access and multimodal options to both the residents and businesses along this dense and thriving corridor. The passenger rail, commuter rail, and intermodal freight services that use this corridor, including shipments serving the Port of Virginia, require high on-time performance.

Projects – Priority projects include adding capacity to the Long Bridge, a major chokepoint affecting CSX, Amtrak, and VRE service, and implementing additional capacity improvements to the corridor in Northern Virginia via the Atlantic Gateway improvement program. Longer term, additional improvements will be necessary to support improved passenger service.

Port of Virginia

Background – The Port of Virginia is the 5th largest container port in the nation. Port facilities include four deepwater marine terminals (Hampton Roads), an upriver terminal (Richmond), and an inland intermodal terminal (Front Royal). The Port is served by more than 30 international shipping lines, serving more than 200 countries. More than 33 percent of the Port's freight arrives and departs by rail, carried by NS, CSX, and two shortlines, the Norfolk Portsmouth Belt Line and the Commonwealth Railway.

The Port primarily ships to customers in Virginia, North Carolina, Maryland, and West Virginia via truck, and to Ohio, Indiana, Illinois, Tennessee, Kentucky, and beyond via NS and CSX.

Significance – The Port is one of the most significant drivers of freight rail traffic in the Commonwealth. Due to changes in energy demand and production, intermodal traffic is the most dominant growth sector in freight rail traffic, and the Port is well poised to contribute heavily to that growth market. Ensuring efficient loading and unloading of trains, and last mile connectivity to the freight rail network, are vital to ensuring that business at the Port continues to run smoothly and drive the Virginia economy forward.

Projects – Priority projects includes multiple terminal expansions, including at the VIG, VIP, and NIT, with additional rail capacity, and ensuring shortline and switch operators outside the Port gates have the needed capacity to handle the additional growth in rail traffic. Additional priority projects include expanding the inland port at Front Royal and improving rail infrastructure, including grade crossings on tracks serving the Ports.

Shortlines

Background – Virginia's shortline railroads operate at the regional and local level to connect individual customers to the larger freight rail network and make last mile connections to the Port of Virginia. Shortline railroads often serve as either the point of origin or termination for freight carried in and out of Virginia by NS or CSX. Virginia supports shortlines through the Rail Preservation Program, which funds both capacity and state of good repair projects.

Significance – Shortlines provide a critical link to local and regional customers—including the Port—loading, unloading, and building trains that eventually traverse the national rail network through Class I freight service. Many of the shortlines inherited track with years of deferred maintenance, requiring additional resources to maintain a state of good repair. Shortlines are better positioned to accommodate smaller businesses with lower traffic volumes. Virginia supports shortlines as both a

partner in economic development opportunities at the port facilities and in rural areas, and as a means to divert trucks from congested highways.

Projects – Priority projects include improving track to FRA Class 2 safety standards; improving signal systems and technology for more efficient operations; and upgrading bridges and track to accommodate heavier railcars that have become the industry standard. Longer term priority projects include critical infrastructure rehabilitation such as bridges and tunnels, which, if allowed to fail, would create significant safety hazards and may make entire lines inoperable.

VIRGINIA
STATEWIDE RAIL PLAN

CHAPTER 3

PROPOSED PASSENGER RAIL IMPROVEMENTS AND INVESTMENTS

December 6, 2017

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FIGURES

TABLES

3 Proposed Passenger Rail Improvements and Investments

3.1 Introduction

This chapter summarizes ongoing and proposed passenger rail improvements and investments that have the potential to enhance mobility and expand transportation options for Virginia. In general, passenger rail service is categorized as intercity Virginia regional passenger rail service, long-distance intercity passenger rail service, and commuter rail service.

The Virginia Regional passenger rail programs identified in this chapter are consistent with the vision of the Virginia Statewide Transportation Plan (VTrans2040) and the goals and objectives of the State Rail Plan, and are based, in part, on the factors driving change in the rail industry, such as freight movement, household characteristics, land development patterns, transportation technology, and the natural environment.

Over the past two decades, various passenger and freight rail studies and improvement projects have been completed on both of Virginia's main passenger rail corridors to support the Virginia regional passenger rail program, as shown in **Appendix L**. Funding commitments from the Commonwealth of Virginia are already setting the stage for future expansions of Virginia regional intercity passenger rail service, improving connectivity to Amtrak's NEC, and expanding capacity for commuter rail, as well as longer-term planning initiatives to expand long distance service through development of the SEHSR corridor.

Although the Federal Railroad Administration (FRA) requires that this rail plan separate passenger and freight projects (**Chapters 3 and 4,** respectively). Virginia passenger and freight services operate on the same routes using the same infrastructure and as a result many of the projects improve the network for both services. .

3.2 Virginia Regional Passenger Rail on Shared-Use Corridors

DRPT will continue to support the improvement and expansion of Virginia regional passenger rail services to better connect and serve the Commonwealth. Current short-term projects to enhance existing and planned services include:

- Continued support of existing Virginia's Amtrak Northeast Regional Passenger service
- Construction of a new Newport News Multimodal Transportation Center

- Service improvements to Virginia regional service passenger trains to Lynchburg
- Additional Virginia Northeast Regional passenger train frequencies between Richmond and Hampton Roads

For DRPT, improving Virginia regional passenger rail services is not simply a matter of paying for train equipment and operating expenses. All intercity passenger rail services in Virginia operate on rail lines owned by freight railroads, and many of those routes are busy freight railroad corridors with little to no excess capacity. DRPT's approach has been to secure capacity on freight rail lines for future passenger service expansion. The agency has established a track record of success through its partnerships with host freight railroads to expand or introduce intercity passenger rail service on major freight rail corridors, balancing freight and economic development needs with the improved mobility, transportation, and environmental benefits offered by passenger rail. Support for conventional intercity passenger rail projects advances DRPT's overarching transportation goals to optimize return on investments; ensure safety, security, and resiliency; efficiently deliver programs; consider operational improvements and demand management first; and ensure efficient intermodal connections. Long term projects to improve passenger rail services are described in the following chapters.

3.2.1 Improvements to Richmond and Hampton Roads Services

Expansion and improvement initiatives for Virginia regional passenger rail services between Washington, D.C., Richmond, and Hampton Roads that serve the Washington to North Carolina and a part of the East-West corridor are included in the following chapters.

3.2.1.1 Long Bridge Capacity Expansion

The Long Bridge is a double-track railroad bridge built in 1904 and owned by CSX, which crosses the Potomac River between Washington, D.C. and Arlington, Virginia. The bridge provides the only Potomac River rail crossing between Washington, D.C. and Northern Virginia, and is used by all Amtrak intercity passenger trains, VRE commuter trains, and CSX freight trains entering or passing through the Washington, D.C. area from Virginia. Passenger and commuter trains now comprise more than two-thirds of the train traffic crossing Long Bridge.

As rail traffic of all types over Long Bridge has increased in the past two decades, notably intercity passenger and commuter rail traffic, the bridge's two mainline tracks have become a chokepoint that in recent years has proven to be the most significant rail network bottleneck to rail services in Virginia. Without additional rail capacity across the Potomac River, Virginia will be unable to implement long-term plans to expand and improve passenger, commuter, and freight rail services.

In 2011, Washington, D.C.'s Department of Transportation (DDOT) received a federal HSIPR grant from FRA to complete a two-stage feasibility study for the rehabilitation or replacement of Long Bridge. Phase I of the study was completed in 2015. Phase II of the Long Bridge Study is currently underway and being managed by DDOT in coordination with DRPT, VRE, CSX, and FRA. This phase will advance the National Environmental Policy Act (NEPA) process by developing a draft Purpose and Need Statement, developing a service plan based on future demand in the corridor, further refining conceptual alternatives developed in Phase I, and defining evaluation criteria to screen and identify the alternatives that will be carried forward for analysis in Phase III of the study, which will be an Environmental Impact Statement (EIS). In 2016, DDOT received a Transportation Investment Generating Economic Recovery (TIGER) grant from FRA for the preparation of the Long Bridge EIS - Phase III. The study will evaluate a range of alternatives, all of which include increased rail capacity across the Potomac River.

3.2.1.2 Atlantic Gateway Project

In July 2016, U.S. DOT announced the award of a federal FASTLANE grant for $165 million to expand rail and highway capacity in Northern Virginia as a part of Virginia's Atlantic Gateway Project, a $1.4 billion package of rail and highway expansion projects intended to address some of the worst freight and passenger transportation bottlenecks on the Interstate 95 corridor. DRPT and VDOT collaborated on the development of the multimodal Atlantic Gateway Project, and will combine the federal grant funding with $565 million in private investments and $710 million in state and other transportation funds. The Atlantic Gateway Project contains five distinct rail capacity and engineering projects, described in **Table 3-1.**

Table 3-1: Atlantic Gateway Rail-Related Projects

Name	Description	Estimated Cost, in millions (2015)
6 miles of 4th main track (Arlington-Alexandria)	Construct six miles of fourth mainline track from the north bank of the Potomac River at Arlington to the AF interlocking in Alexandria, where passenger and commuter trains bound for Manassas diverge from CSX's RF&P mainline. The addition of a fourth mainline track will expand network rail capacity and improve operations on the most heavily used rail line in Virginia. These improvements will allow additional intercity passenger and commuter trains to use the corridor.	$185
8 miles of 3rd main track (Franconia-Occoquan)	Construct eight miles of third mainline track from the Franconia-Springfield VRE station to a location just north of the Occoquan River. The additional third track would connect with the existing third mainline track constructed in 2009, to provide approximately 20 miles of continuous three-track mainline from Arlington, Virginia to the Occoquan River. These improvements will allow for additional VRE commuter trains to use the corridor and ultimately accommodate the proposed SEHSR corridor passenger service, as well as expanded intermodal and freight rail traffic.	$220
Two universal crossovers	Construct two universal crossovers south of Fredericksburg to improve operational flexibility and network fluidity just south of the VRE commuter territory. The crossovers will increase operational flexibility by providing additional locations where Amtrak passenger trains can meet and pass freight trains, and will ultimately accommodate the proposed SEHSR corridor passenger service, as well as expanded intermodal and freight rail traffic.	$30
Long Bridge Program Development	Fund program development to advance engineering, stakeholder agreements, and outreach in support of the long-term, multi-agency initiative to increase rail capacity across the Potomac River through the expansion or replacement of the Long Bridge.	$30
S-Line Transfer	Provide a mechanism to allow for the transfer from CSX to public ownership of the S-Line, an abandoned rail line that runs from North Carolina to the Petersburg area. The line is a critical component of the SEHSR corridor's proposed route between Richmond and Raleigh, and will enable the operation of higher-speed passenger trains on a dedicated passenger rail line at speeds of 110 mph.	$30

Source: DRPT

Table 3-2 identifies the sources and uses of funds for the Atlantic Gateway rail projects described previously. DRPT has committed up to $174 million (2015 dollars) in IPROC funds toward these significant projects and has received allocations of $118 million (2015 dollars) in Priority Transportation Funds from the Secretary's office to supplement the FAST Act and other federal funds that will be used for third track and Long Bridge improvements. Atlantic Gateway project segments are expected to go to bid in 2017.

Table 3-2: Sources and Uses of Funds for Atlantic Gateway Rail Projects (all funds in millions of dollars, 2015)

Project	Total Cost	Private	State	FASTLANE	Other Federal
6 miles of 4 main tracks (Arlington-Alexandria)	$185	-	$48	$55	$82
8 miles of 3 main tracks (Franconia-Occoquan)	$220	-	$220	-	-
Two universal crossovers	$30	-	$30	-	-
Long Bridge Program Development	$30	$15	-	$15	-
S-Line Transfer	$30	$30	-	-	-
Total Cost	$495	$45	$298	$70	$82

Source: Atlantic Gateway: Partnering to Unlock the Interstate 95 Corridor FASTLANE Grant Application

3.2.1.3 Arkendale to Powells Creek Third Track

In 2010, FRA awarded DRPT $74.8 million (2010 dollars) in federal ARRA funds to construct a third main track along CSX's Interstate 95 corridor between Powells Creek and Arkendale in Prince William and Stafford Counties. This $115 million project will improve intercity passenger rail service and minimize interference with freight train traffic. In addition, the CTB allocated $40 million (2016 dollars) in IPROC funds for passenger station platform improvements at the existing Quantico station and future Potomac Shores VRE station. These improvements are scheduled to be completed in 2018.

3.2.1.4 Norfolk Train Extensions - Second and Third Round Trips

In 2012, DRPT completed capacity projects on the NS mainline between Petersburg and Norfolk that enabled the launch of the first daily round-trip intercity passenger train between Richmond and Norfolk. While the improvements made on the NS segment will allow up to three daily passenger round trips, the Richmond to Petersburg segment on CSX requires additional capacity improvements before a second and third passenger train to Norfolk can be accommodated.

DRPT has obligated $117 million of IPROC and REF funds (2015 dollars) to the construction of new west bypass tracks around Acca Yard in Richmond, removing all mainline tracks from inside the yard and allowing passenger and freight trains to move through the terminal more smoothly and at a higher speed. Construction of a fourth mainline track between Richmond Staples Mill Road Station and the north end of Acca Yard; construction of a second mainline track between Carson and Reams (south of Petersburg) to eliminate an 8-mile, single-track operational bottleneck and reduce conflicts with passenger trains; and construction of three crossovers south of Richmond to improve network fluidity are also part of this project. These improvements to improve capacity will potentially allow for two additional round-trip passenger trains between Richmond and Norfolk, as well as an additional round-trip passenger train between Washington, D.C. and Lynchburg. Two Virginia regional trains that now terminate in Richmond could extend their route to Norfolk to provide the additional service.

3.2.1.5 Long-Term Investments in Washington, D.C. – Richmond – Hampton Roads Passenger Service

DRPT will continue to look for opportunities to invest in additional rail capacity that will provide for additional frequencies, improved reliability, and faster travel times for intercity passenger trains along the Washington D.C. – Richmond – Hampton Roads Corridor. Some of the potential long-term funding opportunities that DRPT may pursue to enhance conventional intercity passenger rail service between Washington, D.C., Richmond, and Hampton Roads include:

- Investments to add rail capacity across the Potomac River through an expansion or replacement of Long Bridge. Construction of additional Long Bridge rail capacity is crucial for long-term expansions of intercity passenger rail service and commuter rail service.
- Investments to building one or more additional mainline tracks between Washington, D.C. and Richmond, or fund other types of capacity improvements such as additional crossovers.
- Investments to build additional track, crossovers, or other capacity projects to eliminate bottlenecks on shared-use passenger lines between Richmond and Hampton Roads.
- Investments in the SEHSR corridor, discussed in **Chapter 3.3**, which will require capacity improvements such as those discussed above and will also deliver benefits to the Virginia regional passenger rail service, host freight railroad operations, and VRE commuter services in this shared-use corridor.

3.2.2 Washington to Lynchburg/Roanoke Corridor Improvements

Expansion and improvement initiatives for Virginia regional passenger rail services between Washington, D.C., Lynchburg, and Roanoke that serve the U.S. 29, Interstate 81, and U.S. 460 corridors are described in the following chapters.

3.2.2.1 Extension of Amtrak service from Lynchburg to Roanoke

In late 2017, DRPT introduced Virginia regional intercity passenger service between Lynchburg and Roanoke. This service is operated as an extension of the current Virginia regional round-trip train between Washington, D.C. and Lynchburg. DRPT obligated $77.5 million in IPROC funds and $24 million from the REF (2015 dollars) to construct track capacity improvements between Lynchburg and Roanoke with a train servicing facility and a boarding platform in downtown Roanoke.

3.2.2.2 Second Regional Round Trip to Lynchburg

Following the service extension to Roanoke, DRPT will pursue a project that would allow a second daily round-trip train between Lynchburg and the NEC via Washington, D.C. The proposed frequency would run counter to the current single round-trip train service, which provides an early morning northbound departure from Roanoke and Lynchburg to Washington, D.C., and an evening southbound return from Washington, D.C. to Lynchburg and Roanoke. The proposed second daily round-trip would be in addition to Amtrak's long-distance Crescent train between New York and New Orleans.

3.2.2.3 Service Extension Studies: Roanoke to New River Valley and Bristol

Further extensions of intercity passenger rail service from Roanoke west to the New River Valley and Bristol continue to be part of DRPT's long-term plans to incrementally expand service on the Interstate 81 corridor. The CTB has allocated funds for a network capacity study that, if performed, would help determine potential rail infrastructure requirements that might be required to extend passenger service from Roanoke to Christiansburg in the New River Valley and beyond to Bristol.

3.2.2.4 Long-Term Investments in the Interstate 81, U.S. 29, and U.S. 460 Corridors

The strong ridership and revenues achieved by Virginia's regional passenger service to Lynchburg points to the value of the investments made so far, and provides evidence that suggests additional expansion opportunities will generate more benefits for travelers and communities in Central and Southwestern Virginia. Some of the potential long-term funding opportunities that DRPT may pursue to enhance intercity passenger rail service between Washington, D.C. and areas in southern and western Virginia include:

- Investments to build additional track, crossovers, or other capacity projects to eliminate bottlenecks on shared-use passenger lines between Alexandria and Lynchburg, Roanoke, or other passenger rail destinations in the corridor.
- Investments that will allow for the operation of additional frequencies on existing corridors or expansions of service to new locations. Specific long-term initiatives include those to advance cross state connections and may include, but are not limited to, the following:

- ***Roanoke-New River Valley-Bristol*:** Investments to extend intercity passenger service west of Roanoke to the New River Valley, Bristol, and potentially further west to Knoxville or Chattanooga, Tennessee.
- ***Lynchburg-Charlotte*:** Investments to extend regional intercity passenger service south of Lynchburg to Danville, Virginia and beyond to Charlotte, North Carolina; a corridor identified by stakeholders during the State Rail Plan outreach process as a potential new service extension opportunity.
- ***Second Roanoke Train*:** Investments to support additional frequencies on existing corridors, including a potential second daily round-trip regional train to Roanoke from the NEC via Washington, D.C.
- ***Lynchburg-Richmond*:** Investments to extend service on the U.S. 460 corridor between Lynchburg and Richmond, which would not only provide opportunities for cross-state travel but also establish connections between existing intercity passenger rail corridors that are currently oriented toward north-south travel. Potential routes identified include a connector bus along Interstate 64 or Route 460. Rail service could include the NS line between Lynchburg and Richmond or the Buckingham Branch line between Charlottesville and Richmond.

3.3 Southeast Corridor Initiative

Virginia is supportive of the federal initiative to improve passenger rail in the Southeast. As such, the Commonwealth will continue to engage in the following initiatives to advance passenger rail projects in this region:

- Virginia-North Carolina High Speed Rail Compact
- SEHSR Richmond to Raleigh (R2R) Final Design and Implementation
- SEHSR, Washington D.C. to Richmond (DC2RVA) Tier II Environmental Impact Statement / Preliminary Engineering
- SEHSR, Richmond to Hampton Roads Tier II Study

Virginia and North Carolina have established the only bi-state, high-speed rail partnership in America, the Virginia-North Carolina High Speed Rail Compact, which was authorized by Congress and established through legislation enacted by the Virginia and North Carolina General Assemblies. The purpose of the Compact is to examine and discuss strategies to advance multi-state high-speed rail initiatives. Virginia has also planned for the acquisition of CSX's abandoned S-line between the Petersburg area and Norlina, North Carolina, which is slated to be used for dedicated, 110-mph high-speed intercity passenger rail service.

3.3.1 Federal High Speed Rail Program

In 2002, FRA designated ten high speed corridors under Section 101-0 of the Intermodal Surface Transportation Act of 1991 (ISTEA) and Section 11-03(c) of the Transportation Efficiency Act for the 21st Century (TEA-21) for passenger rail service in high population density and congested intercity sections of the nation.[1,2] This designation allows a corridor to receive specially targeted funding for highway-rail grade crossing safety improvements and recognizes the corridor as a potential center of high speed rail activity.

3.3.1.1 Southeast High Speed Rail Corridor

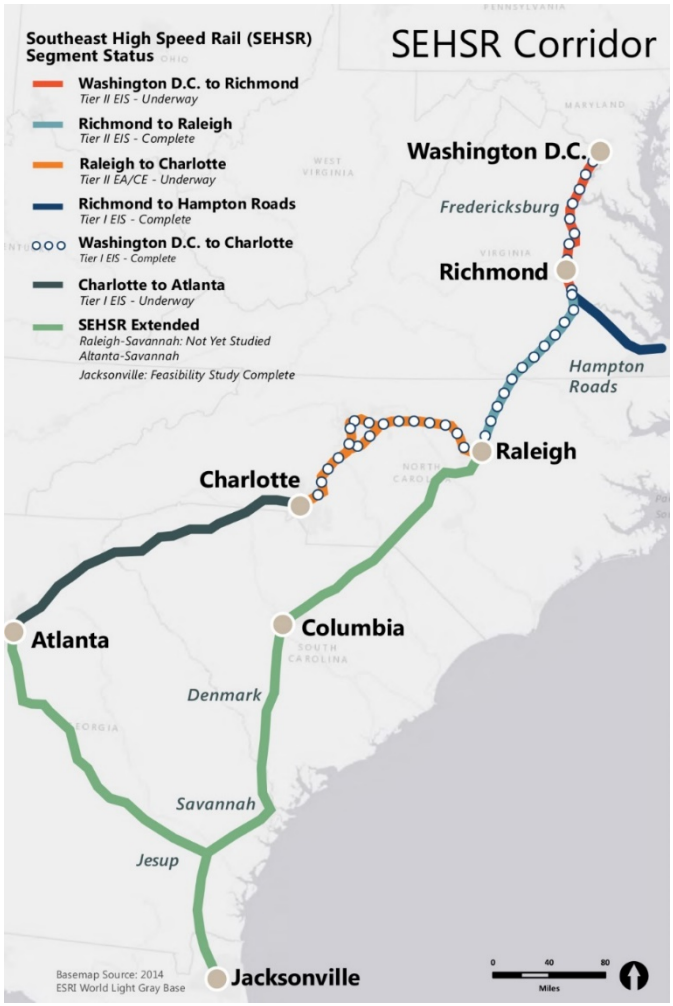
In 1992, the U.S. DOT designated the SEHSR, from Washington, D.C. to Charlotte, North Carolina, as one of five original national high-speed rail corridors. The SEHSR corridor is made up of a number of rail segments with top speeds of up to 110 mph covering the south Atlantic states with passenger rail service to and from the NEC, including Amtrak's service north to New York and Boston. The U.S. DOT subsequently designated an extension of the SEHSR corridor from Richmond to Hampton Roads in 1996, followed by other extensions to Georgia and Florida.

In 2002, a Tier I EIS was completed for the original, 450-mile Washington, D.C. to Charlotte, North Carolina segment of the SEHSR. The environmental study also established the purpose and need for the SEHSR as well as the vision for passenger rail service on the corridor. The SEHSR Tier I EIS recommended an incremental approach to developing the corridor.

Since then, DRPT has been working with the FRA and the states of North Carolina, South Carolina, and Georgia to advance higher-speed rail service on the SEHSR corridor. The system will be developed incrementally, improving and adding capacity to existing rail routes where feasible. The components of the SEHSR corridor, shown in **Figure 3-1**, are in different stages of the planning process.

[1] https://ntl.bts.gov/DOCS/istea.html
[2] https://www.fhwa.dot.gov/tea21/h240suba.htm#1103

Figure 3-1: Map of SEHSR network



3.3.1.2 DC2RVA SEHSR Tier II EIS and Service Development Plan

On October 28, 2010, the FRA announced an award of $45.3 million to DRPT for the completion of a Tier II EIS and Service Development Plan (SDP) for the DC2RVA portion of the SEHSR Corridor. DRPT completed a Draft EIS, which was released in the fall of 2017. The Tier II environmental process has four basic goals:

- Update and confirm the purpose and need as established in the Tier I EIS for the Washington, D.C. to Richmond portion of the SEHSR.
- Develop site-specific rail alternatives to accommodate construction of a third mainline track and other improvements.
- Conduct a detailed evaluation of environmental impacts for the alternatives.
- Select a preferred alternative.

The study will also conduct preliminary engineering and design for the preferred alternative.

3.3.1.3 Richmond to Raleigh Southeast High Speed Rail Corridor Tier II EIS

In 2009, FRA announced the award of $4 million in federal ARRA funds for a Tier II EIS and preliminary engineering for the Richmond to Raleigh, North Carolina segment of the Southeast High Speed Rail Corridor. The study covers the 162-mile segment of the SEHSR between Richmond and Raleigh, and calls for the reactivation of 76 miles of CSX's abandoned S-Line running southwest from Petersburg, Virginia to Norlina, North Carolina for use as a dedicated passenger right-of-way where trains can operate at speeds of up to 110 mph. The study proposes operating four daily SEHSR round trips between New York and Raleigh via Richmond, with three of those round trips continuing west to Charlotte. As part of the Atlantic Gateway Project, DRPT and CSX will enter into an agreement that will establish a process for transferring ownership of the abandoned S-Line right-of-way to continue advancing work on this segment of the SEHSR corridor.

DRPT and the North Carolina Department of Transportation (NCDOT) completed a Final EIS, which was signed by FRA in September 2015, followed by a signed Record of Decision (ROD) in March 2017.

3.3.1.4 Richmond to Hampton Roads Southeast High Speed Rail Corridor Tier II EIS

DRPT is in the process of identifying funding sources to initiate a Tier II Environmental Analysis within the next six years for the Richmond-Hampton Roads segment of the SEHSR corridor. In 2012, FRA, in partnership with DRPT, completed a Tier I EIS and ROD for the Richmond to Hampton Roads Passenger Rail Project, which defined the route and service characteristics for the extension of the SEHSR corridor from Richmond Main Street Station south and east to Hampton Roads. The preferred alternative endorsed by DRPT, FRA, and the CTB would provide higher-speed passenger rail service from Richmond Main Street Station to the southern portion of Hampton Roads (Richmond to Norfolk) while improving passenger rail service on the Peninsula (Richmond to Newport News). The Richmond to Norfolk higher speed service would utilize the active portion of the CSX S-Line from the west side of Main Street Station south to Petersburg, and then access the east-west NS line to Norfolk. The Richmond to Norfolk segment could potentially achieve maximum operating speeds up to 90 mph with up to twelve trains per day (six round trips), depending upon the ultimate route chosen and negotiations with the relevant stakeholders. The Richmond to Newport News conventional service would follow the existing route for Amtrak's service to Newport News, which uses CSX tracks (the Peninsula Subdivision) from the east side of Main Street Station through Fulton Yard to Newport News with up to six trains per day (three round trips). A federal ROD was signed in December 2012.

3.3.1.5 Long-Term Projects: Pursue Capacity Improvements to Initiate SEHSR Service

No long-term funding has been allocated for DRPT to construct the full Washington, D.C.-Richmond or Richmond-Raleigh segments of the SEHSR. DRPT will continue to pursue funding opportunities to advance projects in the SEHSR corridor.

3.3.1.6 Union Station Improvements

In July 2012, Amtrak released a Washington Union Station Master Plan, which provides a blueprint for a series of improvements that will address existing deficiencies and accommodate future growth. The Master Plan envisions a four-phase construction effort to be implemented over a 15- to 20-year period. Among the improvements identified in the Master Plan are projects to expand track and platform capacity in the station's lower level, as part of the second phase. A platform will be added to provide access to a new, seventh lower-level platform track, and two island platforms will be rebuilt with high-level surfaces to provide level boarding on four platform tracks. Due to rolling stock incompatibility with high-level platforms, VRE commuter trains would use three low-level platform tracks. In September 2016, Amtrak announced it would use a portion of the $2.45 billion investment package it received for the purchase of 28 next-generation, high-speed Acela Express trainsets to fund a modernization of Washington Union Station's passenger rail concourse and an expansion of its equipment fleet maintenance facility.

3.3.1.7 Northeast Corridor Improvements

Although Virginia's passenger service benefits from the one-seat-ride opportunities provided to major cities in the Northeast, its service is simultaneously impacted by infrastructure constraints and congestion from passenger and commuter trains on the NEC. The limited platform capacity at Washington Union Station creates an additional constraint to both intercity and commuter services. Because of these constraints, any planned service expansions in Virginia would likely be achieved by extending trains that currently terminate at Washington Union Station. This approach provides a way to offer additional frequencies in Virginia that also offer one-seat rides north of Washington, D.C. to destinations such as New York Penn Station, without the need to add more trains on the busy NEC. Because of the heavy commuter traffic on the NEC between Washington, D.C., New York, and Boston, the number of train slots available for additional conventional intercity passenger trains is limited without making costly increases in track capacity.

Other long-term improvements to the NEC are being assessed by Amtrak and FRA. In December 2016, FRA released a Tier 1 Final EIS for the NEC FUTURE project, a comprehensive planning effort to define, evaluate, and prioritize future investments in the NEC from Washington, D.C. to Boston. The NEC FUTURE planning effort will result in a Passenger Rail Corridor Investment Plan (PRCIP) for the NEC that will establish a framework for future investment in the corridor through 2040 and beyond, and provide a long-term vision for the role of passenger rail on the NEC in the regional transportation system and a phased investment plan to accomplish that vision. In July 2012, Amtrak released its own future investment and service plan for the NEC, in a comprehensive study entitled *The Amtrak Vision for the Northeast Corridor – 2012 Update Report*.

3.4 Passenger Rail Station Improvements and Investments

This chapter discusses significant capital improvement projects planned or underway at intercity passenger rail stations in Virginia.

3.4.1 Station Projects Planned or Underway

Major capital investments underway or proposed for intercity passenger rail stations in the Commonwealth are described in this chapter.

3.4.1.1 Alexandria Station Improvements

DRPT and VRE have several projects underway at Alexandria Union Station that will improve pedestrian flow, transit connections, and rail operations. DRPT and VRE are conducting a $10 million project (2016 dollars) to build a pedestrian tunnel between the Alexandria passenger rail station and the adjacent WMATA King Street-Old Town Metrorail station and bus transit center. The new tunnel will provide a direct, sheltered connection between the train station and the transit center. This eliminates the need for passengers making multimodal connections to use a city sidewalk under the railroad and Metrorail bridges at the far end of the station. The pedestrian tunnel will also provide ADA-compliant access to both Alexandria station platforms.

In addition, VRE is about to embark on a $2.4 million platform improvement project (2016 dollars) that will extend Alexandria Station's east platform to accommodate longer trains and elevate the west platform to provide easier access for passengers. VRE has also completed final design on a third project that will reconstruct the station's east platform as an island platform providing access to mainline tracks on both sides. (Currently, the east platform only serves Main Track 2 at its western edge.) This project will also modify the Slaters Lane interlocking north of the station with the installation of a new crossover to enable passenger trains to use the easternmost mainline track and reach the new platform edge being constructed.

3.4.1.2 Quantico Station Improvements

The Quantico Station will receive new station platforms to accommodate longer trains and a platform relocation to provide access to the existing mainline tracks as well as a third mainline track currently under construction between Powells Creek and Arkendale. A new pedestrian overpass will connect a new island platform with the existing east platform, reducing the need for rail passengers to use the Potomac Avenue grade crossing to move between platforms. The project also includes the development of a multimodal bus transfer facility on the west side of the station and expanded parking capacity on the east side.

3.4.1.3 Richmond Staples Mill Road Station Parking Improvements

DRPT and VDOT have embarked on a joint $8.3 million project to double the size of the parking lot at the Richmond Staples Mill Road Station in Henrico County. The current overcrowded parking situation has created a significant barrier to improving ridership on Virginia's regional service trains. The project's construction began late summer 2017 and is expected to be completed by summer 2018. DRPT has obligated $3.3 million of IPROC funds for construction of the Staples Mill Road Station parking expansion.

3.4.1.4 Richmond Main Street Station Restoration

In 2017, the City of Richmond concluded the third phase of a three-phase $92 million restoration of Main Street Station. The first phase included acquisition of the headhouse by the City of Richmond, renovation of the headhouse, and construction of a new station platform on the east side of Main Street Station, enabling Amtrak service to Newport News to reinstate service to the station in 2003. The second phase included acquisition of the train shed, adjacent Seaboard freight house, and the remaining land. The third phase, now complete, restored the 100,000-square-foot train shed and created new spaces for retail and events. This phase of the project was designed to provide multimodal connections to Richmond's Pulse bus rapid transit system and bicycling connections to the Virginia Capital Trail. The restoration work completed does not preclude the ability of the station to accommodate additional passenger train frequencies.

3.4.1.5 Bland Boulevard Amtrak Station in Newport News

The City of Newport News has secured federal funding for the construction of a new multimodal transportation center, replacing the current Newport News passenger rail station. The new station location will provide improved station access, expand parking capacity, and offer better connections to local transit systems. The new station will be located on a 40-acre site accessed from Bland Boulevard between Highway 60 (Warwick Boulevard) and Interstate 64, in close proximity to the Newport News/Williamsburg International Airport. The facility will be located approximately 8 miles west of the

current passenger rail station, and will include bus bays to provide connections with Hampton Roads Transit and intercity buses, a 222-space parking garage, and transfer areas for airport shuttles and taxis.

The project includes construction of a new passenger train servicing and layover facility located approximately one mile east of the new multimodal transit center, with a new passenger train turning facility. The new facilities will improve passenger rail service reliability by eliminating conflicts with freight trains at the Newport News yard.

3.4.1.6 Tri-Cities High-Speed Rail Station

In May 2017, FRA released a draft Environmental Assessment recommending a new site for a proposed SEHSR multimodal passenger rail station serving the City of Petersburg and surrounding communities in the Tri-Cities Area of Virginia. The recommended site, one of four station sites evaluated, is located on the Boulevard in Colonial Heights. This proposed new station, if built, would replace the existing Petersburg-area passenger rail station located in Ettrick.

3.4.2 Station Policy

The Commonwealth's success in implementing new Virginia regional intercity train routes and frequencies has drawn interest from municipalities seeking to add stops to planned or existing Amtrak services. The expansion of passenger rail service to Lynchburg (2009), Richmond (2010), Norfolk (2012), and Roanoke (2017) and high profile studies such as the DC2RVA high speed rail study have encouraged additional requests, including Bedford, Bowers Hill, Bristol, Carmel Church, Colonial Heights, La Crosse, Petersburg and others. Although new stations provide opportunities for travelers to access a passenger rail service, additional stops may affect train services by increasing travel time and limiting freight network capacity and fluidity. These results affect ridership, travel time, and operations/capital costs for the service.

As a result, DRPT and the CTB determined a need for a consistent policy to evaluate station proposals. The Intercity Passenger Rail Station Policy, provided as Appendix O, lays out a methodology for DRPT and the CTB to evaluate proposals for stops, and provides guidance on the roles and responsibilities of a locality to fund and maintain a successful station. It also outlines necessary coordination efforts required with rail service partners like Amtrak, FRA, and the host railroads.

3.5 Virginia Railway Express Commuter Service

In Northern Virginia, VRE commuter rail service operates on the same CSX and NS freight rail lines used by Amtrak intercity passenger trains. VRE has its own capital plan to address short-term and long-term improvements. DRPT has partnered with VRE on standalone projects that benefit the commuter agency as well as projects to increase rail capacity and improve operational performance on shared-use freight

rail lines accommodating both commuter and intercity passenger rail services. This chapter highlights some of VRE's key initiatives.

3.5.1 VRE System Plan 2040

One of the key drivers behind VRE's short-term and long-term improvement projects is the Virginia Railway Express System Plan 2040, which was released in 2014. The System Plan 2040 outlines a vision for VRE system investments and recommended actions through 2040 to sustain and grow service to meet regional travel needs. The Plan provides the framework within which decisions can be made by the VRE Operations Board with respect to implementation of capital programs and projects, partnerships with DRPT and other stakeholders, and VRE's track use agreements with CSX, NS, and Amtrak. Specific goals of the VRE System Plan include:

- Provide passengers with rolling stock, stations, and service maintained to the highest quality
- Improve and expand service for current VRE passengers
- Address emerging ridership markets
- Advance VRE's role as part of a multimodal regional mobility network
- Invest in partnerships to add capacity in multi-use rail corridors

Investments in the System Plan are grouped into three phases. In the first phase through 2020, relatively low-cost projects are proposed that will maximize the capacity and service currently allowed under VRE's existing agreements with CSX and NS. The second phase from 2021 to 2030 includes a potential service expansion plan in the Manassas area, and major investments that could relieve key capacity bottlenecks on the VRE system, including investments in the Long Bridge crossing of the Potomac River. The final phase of the System Plan, from 2031 through 2040, returns to a level of investment comparable to Phase 1 and contains capital projects that would enable continued growth in traffic, including investments to continue triple-tracking of the CSX mainline between Alexandria and Spotsylvania. The combined projected capital cost for all three phases of the plan is $2.73 billion (2014 dollars).

3.5.2 Major VRE Initiatives

Significant, multi-year capital improvement projects that VRE and DRPT have partnered to undertake are discussed in the following chapters.

3.5.2.1 Gainesville/Haymarket Extension

VRE is conducting a $2.5 million (2013 dollars), two-phase feasibility study to analyze several options to expand capacity at the end of the VRE Manassas Line. Phase 1 was completed in late 2016, which identified five different service expansion alternatives, including a potential 11-mile extension of VRE's

service along a NS freight rail line from Manassas through Gainesville and to the general vicinity of the town of Haymarket. After reviewing the initial findings from Phase 1, the VRE Operations Board voted in March 2017 not to pursue an extension to Haymarket, but instead to advance a different alternative identified in Phase 1 that would allow for increased service on the existing Manassas Line route. This alternative recommended an expansion of the Broad Run storage yard and maintenance facility to accommodate six additional trains per day. The Operations Board vote will allow work to begin on Phase 2 of the study, which includes environmental evaluation consistent with the NEPA process and preliminary engineering design.

3.5.2.2 VRE Station Expansion Program

DRPT and VRE are funding several station improvement projects to improve passenger convenience and operating performance. These projects include the construction of a second platform at station locations where only one of the Fredericksburg Line's two main tracks is served by an existing platform, and the lengthening of station platforms to accommodate longer trains of up to eight cars, which will reduce the station stop time required. VRE is planning on implementing platform improvements at the following stations:

- **Crystal City Station:** VRE will replace the existing platform with a new island platform serving Tracks 2 and 3.
- **Alexandria Station:** VRE will lengthen and widen the existing island platform to serve tracks on both sides of it (Tracks 1 and 2), and improve the tunnel connecting the island platform to the main station for ADA accessibility and connectivity to the adjacent King Street Metrorail station.
- **Franconia-Springfield Station:** VRE will lengthen the existing platforms and widen the east platform to become an island platform in preparation for an extension of eastern mainline track 1 through the station area as part of the Atlantic Gateway improvements.
- **Lorton Station:** VRE will lengthen the existing eastern platform, and construct a new platform and pedestrian bridge on the western side of the right-of-way.
- **Woodbridge Station:** VRE will lengthen the existing eastern platform.
- **Rippon Station:** VRE will lengthen the existing eastern platform, and construct a new platform on the western side of the right-of-way.
- **Quantico Station:** VRE is lengthening both existing platforms to accommodate longer trains, and is converting the west side platform into an island platform to serve both an existing track and the new third mainline track under construction between Powells Creek and Arkendale for operational flexibility.
- **Brooke Station:** VRE will lengthen the existing eastern platform, and construct a new platform on the western side of the right-of-way.

- **Leeland Road Station:** VRE will lengthen the existing eastern platform, and construct a new platform on the western side of the right-of-way.

Study, design, and engineering work are advancing independently for each station, with a few exceptions. VRE has combined plans to add second platforms at five of its stations under the "Penta-Platform Project." This project includes platform additions proposed for Franconia-Springfield, Lorton, Rippon, Brooke, and Leeland Road stations. **Appendix M** summarizes the short-term capital projects identified by VRE in its December 2016 CEO Report.

3.6 Concepts from Stakeholder Outreach

Various project concepts were suggested by the participants of public and stakeholder outreach conducted for the State Rail Plan. Stakeholder Committee meetings were held on November 22, 2016 and April 13, 2017. The meetings used various activities that engaged stakeholders in identifying bottlenecks, chokepoints, and economic development opportunities in the Commonwealth, as well as identified investments to enhance Virginia's railroad network and to prioritize the types of passenger and freight rail projects needed within the Commonwealth. These activities focused on interviews with representatives from Amtrak and VRE, government agencies, and MPOs using an online survey that was provided by DRPT. Outreach conducted as part of the Virginia State Rail Plan will be described in detail in **Chapter 6**.

Stakeholders expressed support for passenger rail projects that would address:

- Improvements in travel reliability and on-time performance
- Improvements to add more frequencies on existing routes
- Improvements to reduce travel time
- Improvements to corridors that provide opportunities for intra-state trips, particularly cross-state trips (i.e., Norfolk-Roanoke, Charlottesville-Bristol, Lynchburg-Richmond, Lynchburg-Charlottesville-Richmond-Hampton Roads) and interstate trips on routes with high travel demand (i.e., Lynchburg-Charlotte)
- Improvements to develop new intercity passenger corridors (i.e., east-west passenger connections), while maintaining existing service frequencies on existing routes
- Improvements to expand opportunities for commuting to and from work
- Improvements to transit connections at passenger rail stations (i.e., expansions, modal connections, parking, etc.), including additional connecting Amtrak Thruway bus services
- Improvements to VRE commuter service

Chapter 5 includes specific projects identified through the survey and stakeholder outreach process.

VIRGINIA
STATEWIDE RAIL PLAN

CHAPTER 4

PROPOSED FREIGHT RAIL IMPROVEMENTS AND INVESTMENTS

December 6, 2017

CONTENTS

TABLES

4 Proposed Freight Rail Improvements and Investments

4.1 Introduction

This chapter describes potential improvements and investments to address the freight rail and rail safety needs of Virginia. The following chapter describes projects identified by Virginia railroads and other participants in the outreach activities conducted during the development of this Plan, as described in **Chapter 6**. Select projects are included in DRPT's Rail Service and Investment Program (RSIP), which is the subject of **Chapter 5**. Although the projects described in **Chapters 3, 4, and 5** differentiate between passenger and freight rail, as required by FRA, in Virginia passenger and freight rail services operate on shared routes. As a result, many of the projects and initiatives discussed in this chapter ultimately benefit both passenger and freight rail and could be considered both a passenger and a freight rail project.

4.2 Class I Railroad Improvements

Class I railroad companies in Virginia must use private financing to cover the cost of equipment acquisition, such as locomotives and railcars, and infrastructure improvements aimed at renewing, upgrading, or expanding the state rail network, such as rail, ties, bridges, and signal systems. Railroads rely on a regulatory framework that provides sufficient return on investment as a means to accommodate these capital expenditures. Some programs administered by DRPT – notably the Rail Enhancement Fund – are available to Class I railroads to help fund rail network improvement projects, target job creation projects, and follow the goals and objectives of the State Rail Plan.

During the last five years, the Class I railroads in Virginia have invested heavily in their networks to solve persistent capacity constraint issues that impact efficiency, velocity, and volume of through traffic.

During the last five years, the Class I railroads in Virginia have invested heavily in their networks to solve persistent capacity constraint issues that impact efficiency, velocity, and volume of through traffic. These investments were made to eliminate/mitigate operational chokepoints, handle various upgrades associated with maintenance and safety (including implementing Positive Train Control [PTC], which reduces the likelihood of train speeding and collisions), improve economic efficiency, support environmental sustainability, and accommodate routine infrastructure renewal.

Virginia's Class I railroads will continue to upgrade bridges and other infrastructure on several branch lines in the Commonwealth in order to accommodate railcars with a maximum allowable gross weight of 286,000 pounds (which has become the industry standard weight limit on Class I railroads). Detailed characteristics of the Class I rail network in Virginia, including allowable weights, are identified in **Appendix A**. Class I railroad needs were discussed with each of the carriers during the stakeholder outreach process conducted for the Virginia State Rail Plan.

4.2.1 Class I Railroads Past and Planned Improvements

4.2.1.1 CSX Transportation

Capital outlay by CSX on its total network during 2015 was $2.6 billion and included maintenance and upgrading of existing track and bridges, adding new track capacity, and improvements to network and facility efficiency.[1] Approximately $42.6 million of this investment was made in Virginia.[2] CSX's recent projects completed during 2011-2015 address mainline capacity constraints and operating efficiency issues within/affecting its Virginia network and include:

- **National Gateway** – Multi-state, public-private infrastructure project to improve the flow of freight between the Mid-Atlantic and the Midwest by clearing key freight corridors for double-stack rail service.[3] This project will help to create a more efficient rail route that links Mid-Atlantic ports with Midwestern consumption markets.[4]
- **Virginia Avenue Tunnel** – Replacement of one single-track, low-clearance tunnel with two new tunnels with clearance for double-stack rail service in southeast Washington, D.C. is critical in the movement of freight between key ports, manufacturing, and consumer markets while reducing rail and highway congestion in Washington, D.C. and the surrounding area. One tunnel is completed and in service, and one tunnel is still under construction.

CSX reported that it planned to invest approximately $2.4 billion on its total network in 2016.[5] Projects will generally include maintenance of the core network and infrastructure, PTC implementation, and locomotives and equipment. Specific future capital investment projects for its network in Virginia were not identified by CSX during development of the Virginia State Rail Plan with the exception of the continuation of the National Gateway Project.

1 https://www.csx.com/index.cfm/library/files/responsibility/2015-csr-downloads/2015-report/
2 https://www.csx.com/index.cfm/about-us/state-information/virginia/
3 https://www.csx.com/index.cfm/about-us/state-information/virginia/
4 https://www.csx.com/index.cfm/about-us/projects-and-partnerships/national-gateway/
5 http://www.rtands.com/index.php/freight/class-1/csx-targets-dol24-billion-capex-in-2016.html

4.2.1.2 Norfolk Southern Railway

Between 2015 and 2017, NS reported capital investments averaging $2.1 billion annually to maintain and improve rail infrastructure to enhance capacity, safety, and efficiency on its nationwide network, and to make improvements to its equipment.[6] These investments between 2015 and 2017 include[7]:

- Network Investments – $1.40 billion annual average
- PTC Implementation – $235 million annual average
- Rail Equipment – $489 million annual average

Specific projects and their respective capital costs were not identified, but these investments generally include:

- **Track and Bridge Infrastructure –** Includes replacement of rail and ties, improvements to bridges, the addition of double track in some locations, clearance projects for double-stack trains, and upgrades to some branch lines that have realized an increase in traffic volumes.
- **Safety –** Includes installation of additional wayside asset protection devices, such as hot wheel detectors, wheel impact load detectors, signaled sidings for broken rail detection, PTC, and implementation of new track geometry testing and joint bar inspection technology.
- **Growth and Productivity Initiatives –** Includes improvements to yards, intermodal terminals and transload and distribution facilities, and information technology.
- **Equipment –** Includes acquisition of new high-horsepower locomotives and rehabilitation and investment of freight rail cars.

Table 4-1 identifies several specific projects recently completed by NS in Virginia during 2011-2015. Recently, NS completed improvements to both its Heartland and Crescent Corridors, allowing for more efficient freight transportation into the interior of the U.S. and into the Northeast. These projects also addressed mainline capacity constraints and operating efficiency issues within its Virginia network.

[6] http://nscorp.com/content/nscorp/en/norfolk-southerns201524billioncapitalplan.html
[7] Ibid; http://www.rtands.com/index.php/freight/class-1/norfolk-southern-2016-capex-reflects-strategic-focus-toward-streamlined-railroad.html; http://www.progressiverailroading.com/rail_industry_trends/news/Most-Class-Is-cut-capital-spending-for-2017--50691

Table 4-1: Recent NS Capital Projects in Virginia 2011-2015[8]

Project	Type of Improvement	Location
Glade Springs	Siding Extension	Glade Springs
Manassas to Lynchburg	Increase Track Speeds; New Turnouts	Manassas to Lynchburg
Montgomery	Tunnel Clearances	Montgomery
Richmond	Increase Bridge Clearances	Richmond
Chesapeake	Rehabilitate Movable Span Bridge	Chesapeake
Elkton	Replace Superstructure	Elkton
Heartland Corridor	Tunnel clearances and track capacity increase	Norfolk to Roanoke (Virginia) and other locations in the network

During railroad outreach undertaken for development of the Virginia State Rail Plan, NS identified capital needs related to the Port of Virginia. Grade separation projects in particular were identified and would allow for more efficient freight rail moves while also minimizing potential motor vehicle delay at existing at-grade crossings. NS recognizes that these improvements are expensive and will require coordination among multiple public and private parties.

Current bottlenecks and specific future capital investment projects for its network in Virginia were not identified by NS during development of the Virginia State Rail Plan.

4.3 Shortline Railroads Past and Planned Improvements

Virginia's shortline railroads generally face a different set of challenges to implementing improvement projects than do the Class I railroads. This is largely a result of the lack of capital and technical resources, operating capacity and flexibility, and modern infrastructure when compared to the larger Class I railroads.

Shortline railroads typically rely upon private funding, public funding, or some combination of these sources to cover the capital cost of equipment acquisition and general infrastructure improvements. The potential for this funding and its applicability to shortline railroad improvement projects in Virginia are discussed in **Chapter 5**.

[8] http://nscorp.com/content/nscorp/en/norfolk-southerns201524billioncapitalplan.html

Typically, the largest constraints on shortline railroads in the U.S. involve accommodating railcars with a maximum allowable gross weight of 286,000 pounds (the industry standard weight limit on Class I railroads that interchange with the shortlines). Railcars with larger loading capacity provide greater operating efficiency by reducing labor, fuel, and maintenance costs while increasing capacity and synergy for rail operations and rail shippers. In order to accommodate heavier cars, shortline railroads must make upgrades to the track structure, substructure (the rail, switches, ties, and ballast), and bridges to handle the additional loads and stress caused by transporting the heavier cars. Segments of the Virginia rail network incapable of handling these heavier loads, as identified by the Commonwealth's freight railroads during coordination undertaken for the development of the Virginia State Rail Plan, appear in **Appendix A**.

Typically, the largest constraints on shortline railroads in the U.S. involve accommodating railcars with a maximum allowable gross weight of 286,000 lbs.

Due to their strategic locations, many of Virginia's shortline railroads have also shown interest in developing bulk transload and intermodal facilities along busy trucking corridors, such as Interstate 64, Interstate 81, and Interstate 95. These facilities would be served by shortline railroads with freight capacity and would also help to minimize truck traffic to/from many of Virginia's port locations.

Older infrastructure on shortline railroads creates chokepoints that have the potential to limit capacity and hamper the efficiency and flexibility of modern operations. Among other things, chokepoints, and their resultant operational impacts, can lead to protracted delays for motorists and emergency vehicles at blocked highway-rail grade crossings, and can negatively affect air quality due to increased emissions from idling vehicles and trains. Potential constraints from the older shortline infrastructure include:

- Yard capacity that is insufficient for building trains, switching, and staging cars.
- Sidings that are of inadequate number, length, or location to accommodate the demands of present-day train operations.
- Delays that stem from interchanging railcars with another carrier or in the use of trackage rights to access an isolated segment of their network.

4.4 Port-Rail Improvements

As noted in Chapter 1, growth in intermodal rail traffic is a driving factor in rail planning decisions. Intermodal growth is largely driven by the Port's connectivity to markets outside Virginia and the expansion of the Panama Canal, allowing larger container vessels to reach the U.S. east coast. The Port's ability to handle this additional intermodal traffic depends on continued investment in port-rail

infrastructure. In particular, continued investment is critical to ensure the ports' competitiveness relative to other regional ports to the north and south of Virginia.

The Port is poised to enhance multimodal transportation opportunities through investments targeted to rehabilitate existing rail connections between principal railroad lines and port properties; additional sidings, spurs, or yard tracks for switching, staging, and storing railcars at or near port facilities; and expanding on-dock rail capacity; thus enabling more inbound and outbound port traffic to be hauled by rail.

A brief summary of each of port's capabilities is in **Appendix N**. **Table 4-2** illustrates the anticipated rail-related project for each of the ports.

Table 4-2: Virginia Port Authority's Current Rail-Related Projects

Port	Projects
Norfolk International Terminals	Increase on-dock rail capacity by expanding the existing rail yard and improving train loading and unloading efficiencies.
Portsmouth Marine Terminal	Upgrade terminal infrastructure and maximize the use of undeveloped areas in order to increase container storage capacity.
Newport News Terminal	No current rail-related projects.
Virginia Inland Port	Increase on-dock rail capacity by expanding the existing rail yard and improving train loading and unloading efficiencies.
Richmond Marine Terminal	Upgrade existing lead track and improve connectivity with national freight network.
Craney Island Marine Terminal	Improve land area for site develop and construct new intermodal container terminal.

4.5 Highway-Rail Crossing and Safety Improvements

Virginia spends approximately $4 million per year on highway-rail crossing improvements to enhance safety. Funding comes from the Virginia Highway-Railroad Grade Crossing Safety Program (supported by the Federal Highway Safety Improvement Program; formerly Section 130 funds), the Virginia Highway-Railroad Grade Crossing Surface Repair Program, and the Virginia Primary Road-Highway-Railroad Grade Crossing Repair Program. Virginia strives to consolidate projects where possible (e.g., a combination of closures and warning device installation as one project). Refer to **Chapter 2.1.5** of **Chapter 2** for further details about these federal and state funding sources and **Chapter 2.1.6** in **Chapter 2** for a rail crossing inventory and safety data for Virginia.

Over $140 million (2015 dollars) has been spent on upgrading more than 1,340 rail grade crossing locations throughout the Commonwealth since inception of the Federal Highway Safety Act of 1973.[9] During 2017, Virginia anticipates spending approximately $4.0 million, mostly to upgrade active warning devices. Projects funded during 2015-2016, along with the total capital investment for each year's projects, include:

- 2015/2016 ($3.95 million) – 20 total projects:
  - 10 projects upgrading crossings with only flashing light signals to flashing light/gate arm crossings
  - 10 projects upgrading continuous warning time circuitry in crossings protected by flashing light signals and gate arms

Appendix E contains a listing of major Section 130 projects in Virginia.

Beyond highway-rail crossing safety improvements, DRPT identified specific goals for rail safety and estimated the costs for achieving these goals. These are identified in **Chapter 5** of the Virginia State Rail Plan.

4.6 State-Sponsored Rail Investment Programs

The state-sponsored rail programs identified in this chapter are consistent with VTrans2040, which underscores the idea that potential changes in catalytic factors, such as major economic generators, freight movement, household characteristics, land development patterns, transportation technology, and the natural environment, will require a transportation system that is developed with these factors in mind.[10]

In Virginia, these state-sponsored rail investment programs are led by DRPT, with the CTB allocating state funds for the programs. Freight rail funding includes improvements for Virginia's Class I railroads (CSX and NS), nine shortline railroads, the Virginia Port Authority, and businesses expanding or locating on the railroad network. In addition to improving freight capacity, DRPT works to preserve existing freight capacity when accommodating new passenger rail services.[11]

[9] http://www.virginiadot.org/business/HSIP_Implementation_Manual_060315.docx
[10] Ibid.
[11] http://www.drpt.virginia.gov/rail/rail-overview/

Chapter 2 of the Virginia State Rail Plan details how Virginia Code authorizes each of the Commonwealth's sponsored rail investment programs. A list of projects funded through these programs can be found in **Chapter 5** of the Virginia State Rail Plan.

4.7 Concepts from Stakeholder Outreach

Participants in the Statewide Rail Plan Stakeholder Committee and members of the public suggested various project concepts. The stakeholder committee meeting was held on November 22, 2016 and used various activities that engaged key rail stakeholders in identifying bottlenecks, chokepoints, and economic development opportunities in the Commonwealth. The stakeholder committee also identified investments to best enhance the Virginia railroad network. Other outreach activities focused on interviews with representatives from the Commonwealth's Class I and III railroads, government agencies, and metropolitan planning organizations. Outreach conducted as part of the Virginia State Rail Plan is described in **Chapter 6**.

The project categories identified during the outreach are described in the Virginia Rail Service and Investment Plan featured in **Chapter 5** of the Virginia State Rail Plan.

4.7.1 Proposed Freight Projects

Stakeholders generally identified the potential for rail-related projects or initiatives to address:

- Bottlenecks associated with capacity on rail lines and in rail yards;
- Congestion on the Commonwealth's railroad network in urban areas;
- Development of enhanced intermodal and transload facilities;
- Enhanced railroad access and multimodal connectivity (i.e., truck/rail and river barge/rail);
- Opportunities for economic development and maintaining Virginia's competitiveness in the global marketplace;
- Availability of additional Commonwealth funding for railroad improvement projects;
- Improved network efficiency and safety;
- Maintenance and/or replacement of aging rail infrastructure;
- Improvement of the state of good repair of the Commonwealth's freight transportation network; and,
- Captivity of shippers to one railroad.

Specific projects identified through the survey and the stakeholder outreach process, and any opportunities for improved coordination or integration with current and potential future passenger rail services in the Commonwealth, are included in DRPT's Rail Service and Investment Program, which is the subject of **Chapter 5**.

4.7.2 Proposed Safety and Security Projects

Stakeholders generally identified the potential for rail-related projects or initiatives to address:

- Positive Train Control implementation;
- Grade crossing safety, improvements, and reduction by closure and/or grade separation;
- Protecting the integrity of Virginia's freight; and,
- Improved awareness of hazardous materials transportation by rail and improved training and response to hazardous materials incidents.

Specific projects identified through the survey and the stakeholder outreach process, and any opportunities for improved coordination or integration with current and potential future passenger rail services in the Commonwealth, are included in DRPT's Rail Service and Investment Program, presented in **Chapter 5**.

VIRGINIA
STATEWIDE RAIL PLAN

CHAPTER 5

VIRGINIA'S RAIL SERVICE AND INVESTMENT PLAN

December 6, 2017

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5 Introduction

Chapter 5 serves as Virginia's Rail Service and Investment Plan (RSIP), as defined by FRA State Rail Plan Guidance. This chapter describes Virginia's transportation vision, and demonstrates how rail improvements can further that vision through the goals and objectives of the Virginia State Rail Plan. It also identifies stakeholders with whom DRPT collaborates for successful implementation. The Passenger and Freight Rail Capital Program, featured in **Chapter 5.8**, lists short-range and long-range projects and how they meet the Commonwealth's transportation goals.

5.1 Virginia DRPT Rail Vision

5.1.1 State Rail Vision

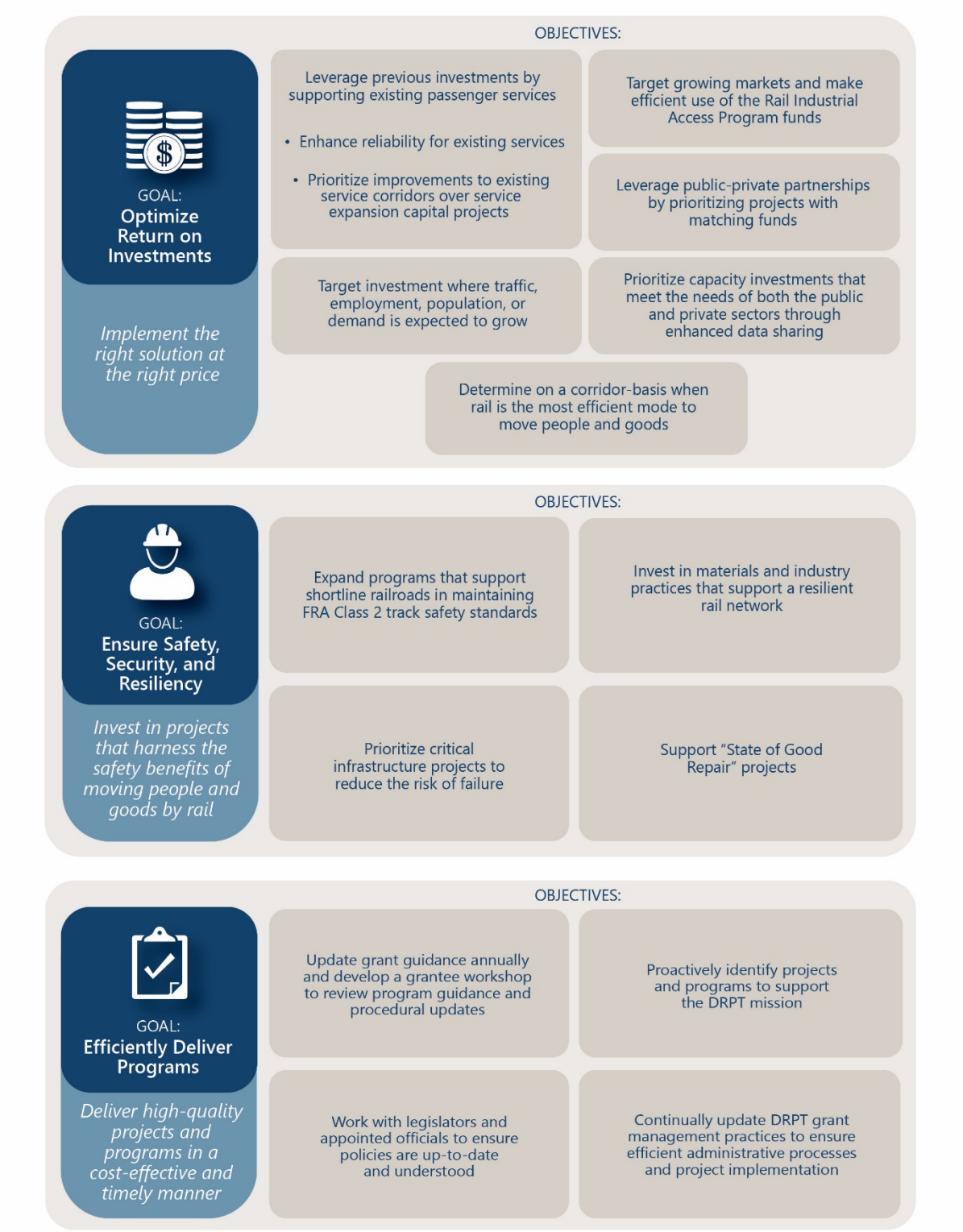
The Virginia Statewide Transportation Plan (VTrans2040) promotes a vision for a multimodal transportation network that is *Good for Business, Good for Communities, and Good to Go*. The Commonwealth recognizes the privately owned rail network as part of a multimodal system with public benefits and growing economic impacts. Since the 2000s, significant state investments have leveraged private and federal funds to improve freight and passenger rail transportation and support the overall transportation system. The Virginia State Rail Plan provides a framework to support a sustainable and reliable transportation system through continued rail investments.

Virginia's rail network is a valuable asset that drives the economy, reduces congestion, improves safety, and saves taxpayer money. Continued investment in rail infrastructure will ensure the mission and vision for the Commonwealth's transportation network is achieved.

5.1.2 Rail Vision Supporting Goals and Objectives

The Virginia State Rail Plan goals are listed in blue and reflect the VTrans2040 Guiding Principles on the left side of **Figure 5-1**. Corresponding objectives for each goal are shown in tan on the right. The objectives show how DRPT can advance freight and passenger rail through planning efforts and funding programs under the DRPT's purview. Together the rail plan goals and objectives are tools to evaluate and prioritize short-term and long-term planning efforts and investments.

Figure 5-1: State Rail Goals and Objectives



GOAL: Consider Operational Improvements and Demand Management First

Maximize capacity of the transportation network through increased use of technology and operational improvements before investing in major capacity expansions

OBJECTIVES:

- Encourage use of Intelligent Transportation Systems to improve operational efficiency
- Evaluate operations when considering investment in capacity to ensure the investment yields a lasting benefit
- Incorporate program criteria that prioritize low-cost improvements to relieve bottlenecks and provide capacity

GOAL: Ensure Transparency and Accountability, and Promote Performance Management

Work openly with partners and engage stakeholders in project development and implementation, and establish performance targets that consider the needs of all communities

OBJECTIVES:

- Publicize application evaluation metrics and project data for rail funding programs
- Implement passenger rail station stop policy
- Develop program scorecards to measure impact of rail investments
- Market economic impact of rail investment

GOAL: Improve Coordination between Transportation and Land Use

Encourage local governments to plan and manage transportation-efficient land development by providing incentives, technical support, and collaborative initiatives

OBJECTIVES:

- Encourage local governments to support state funding decisions by making compatible investments and zoning
- Educate localities on appropriate land uses around both freight and passenger rail infrastructure
- Encourage local governments to support rail services with multimodal last-mile connections
- Integrate with and expand upon other state, regional, and local planning efforts

GOAL: Ensure Efficient Intermodal Connections

Provide seamless connections between modes of transportation

OBJECTIVES:

- Prioritize rail projects that benefit the highway system and improve mode choice
- Enhance rail service to the Port
- Support " State of Good Repair" and capacity projects with shortlines

GOAL: Support Regional Economic Development

Encourage local and regional economic development through investment in the rail network

OBJECTIVES:

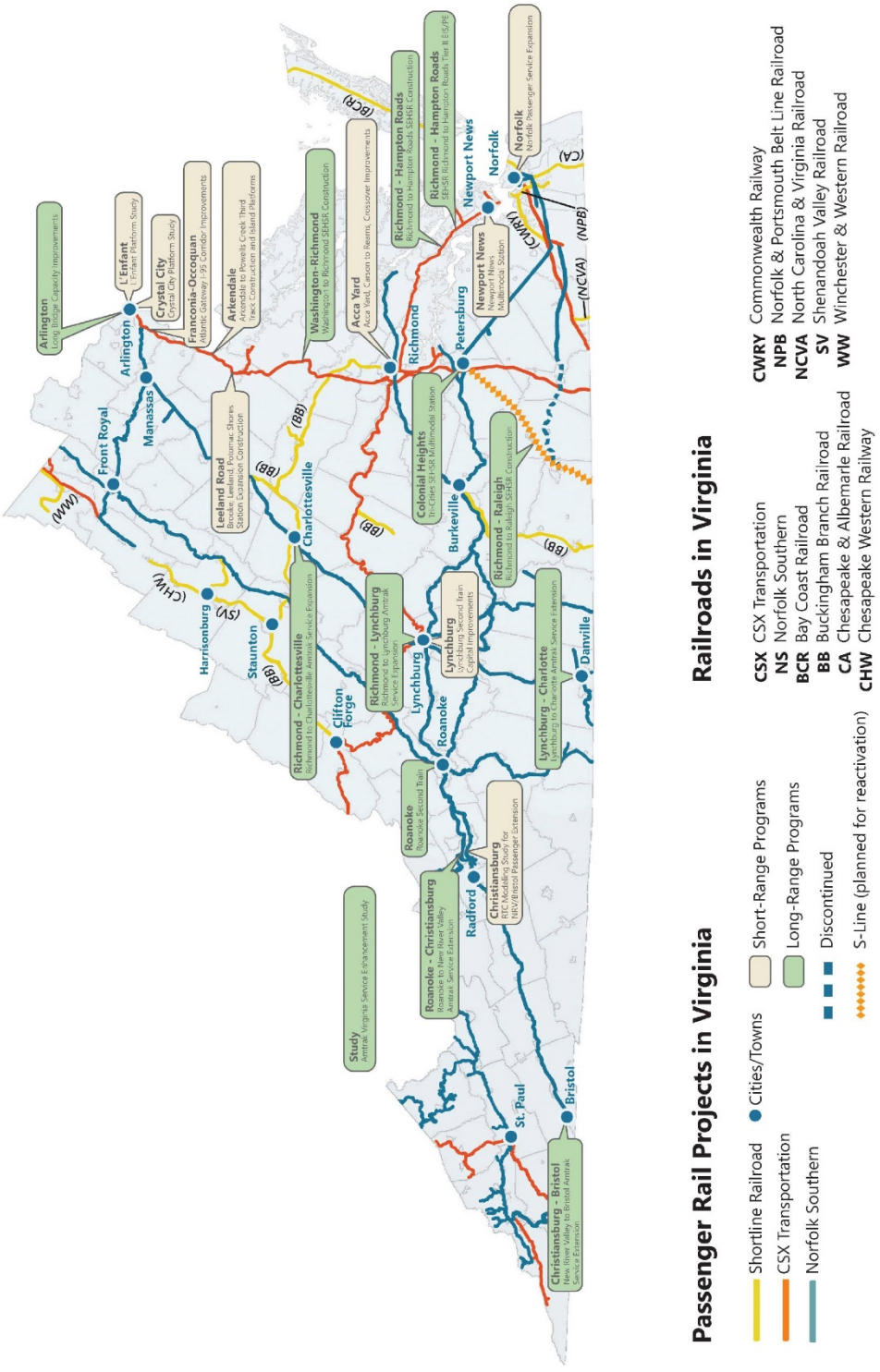
- Work closely with Virginia Economic Development Partnership to attract rail conducive industries in accordance with the Code of Virginia
- Promote the use of the Rail Industrial Access program through education and outreach with local economic development offices
- Include input from local and regional freight railroads in economic development planning and initiatives
- Expand transportation options between regional markets through enhancements to passenger rail service

Using these goals as a guide, DRPT has developed a series of freight and passenger rail projects and initiatives that would, if constructed:

- Improve the capacity, efficiency, and safety of the Commonwealth's rail network,
- Promote railroad access and economic development,
- Improve passenger rail transportation, and
- Bolster connectivity with other transportation modes.

These projects are shown in **Figure 5-2** and **Figure 5-3**. Although the figures differentiate between passenger and freight rail projects, as required by FRA, Virginia's passenger and freight rail services operate on shared routes. As a result, many of the projects shown in the illustrations are identified in the **Chapter 5.8** Passenger and Freight Rail Capital Program.

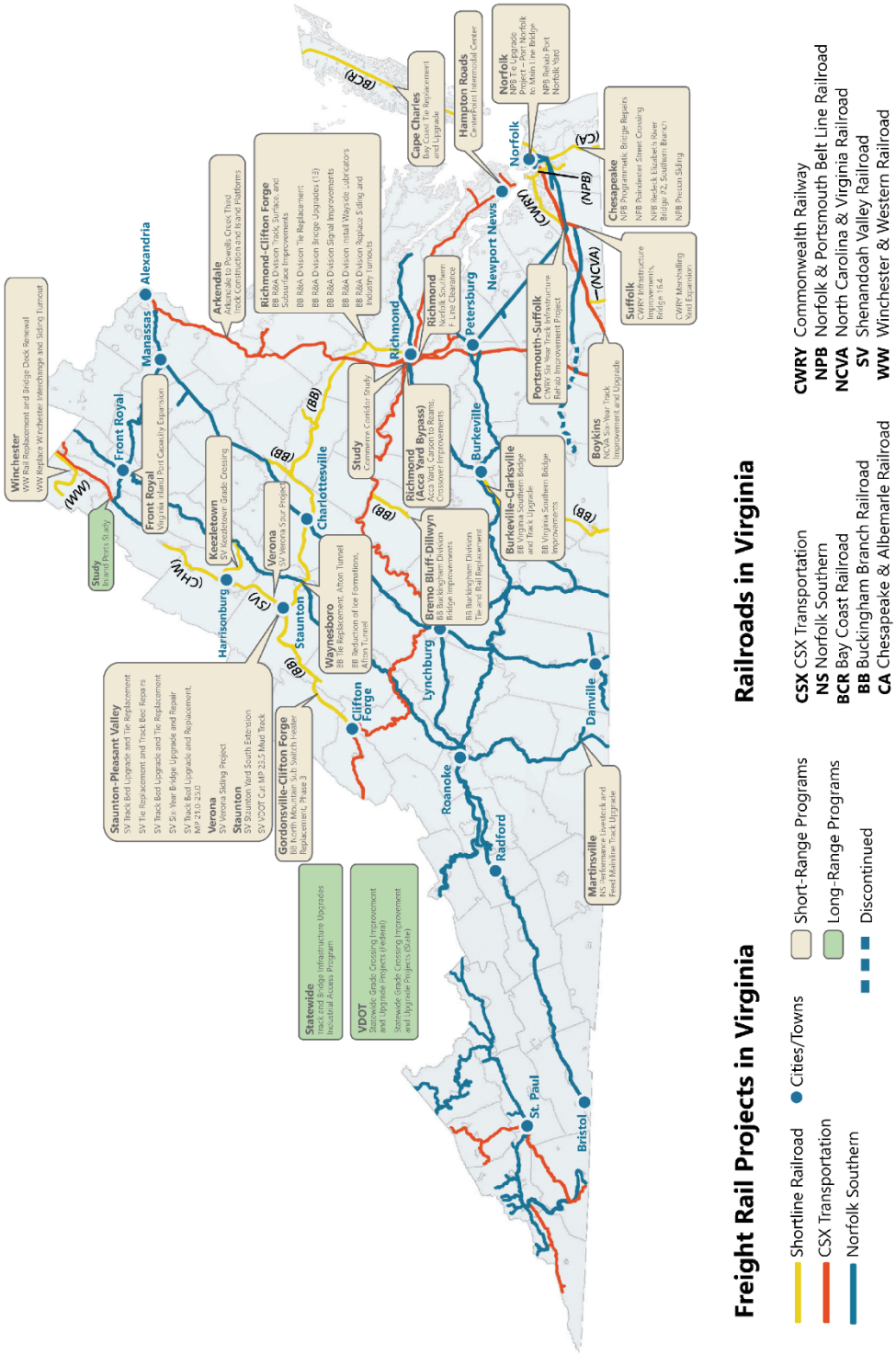
Figure 5-2: Proposed Passenger Rail Projects in Virginia (Short-Range and Long-Range)



Note: Short-range projects include those with allocations between FY18 and FY23, as indicated in the SYIP.

Source: DRPT

Figure 5-3: Proposed Freight Rail Projects in Virginia (Short-Range and Long-Range)



Note: Short-range projects include those with allocations between FY18 and FY23, as indicated in the SYIP.

Source: DRPT

5.2 Program Coordination

This chapter describes how the Virginia State Rail Plan integrates with other transportation planning efforts within Virginia and at the regional and national levels.

5.2.1 Integration with Other State Planning Efforts

VTrans2040 provides direction for all transportation planning and investments in the Commonwealth. VTrans2040 includes the State Multimodal Plan, Freight Plan, and Surface Transportation Plan and is developed by the OIPI Multimodal Working Group. The Multimodal Working Group consists of the lead planners for each mode of transportation and the policy advisors of every agency within the Secretariat, including the VDOT, DMV, MVDB, DOA, VPA, DRPT, and the Commercial Space Flight Authority. This group informs the plans and projects OIPI undertakes, and ensures a truly multimodal transportation system is achieved and maintained in Virginia. The State Rail Plan is intended to integrate with VTrans2040 and expand upon other Virginia transportation plans developed and discussed by the Multimodal Working Group[1]:

5.2.2 National and Regional Rail Planning Integration

Recognizing the integrated nature of the rail network with national and regional markets within and outside of Virginia, DRPT regularly coordinates with outside agencies, including:

- VDOT
- CTB
- Virginia General Assembly
- Office of the Virginia Secretary of Transportation
- MPOs
- VRE
- Virginia localities
- FRA
- Amtrak
- Washington, D.C. Department of Transportation
- North Carolina Department of Transportation
- Southeast Rail Coalition
- States for Passenger Rail Coalition
- American Association of State Highway and Transportation Officials Standing Committee on Rail

[1] http://www.vtrans.org/vtrans2040.asp

- Other states and regional rail agencies

Passenger Rail Investment and Improvement Act of 2008 Compliance

PRIIA directed FRA to develop a Preliminary National Rail Plan to address the rail needs of the U.S. The preliminary Plan, published in October 2009, provided objectives for rail as a means of improving the performance of the nation's transportation system, which included:

- Increased passenger and freight rail performance,
- Integration of all transportation modes to form a more complementary transportation system,
- Identification of projects of national significance, and
- Providing for increased public awareness.

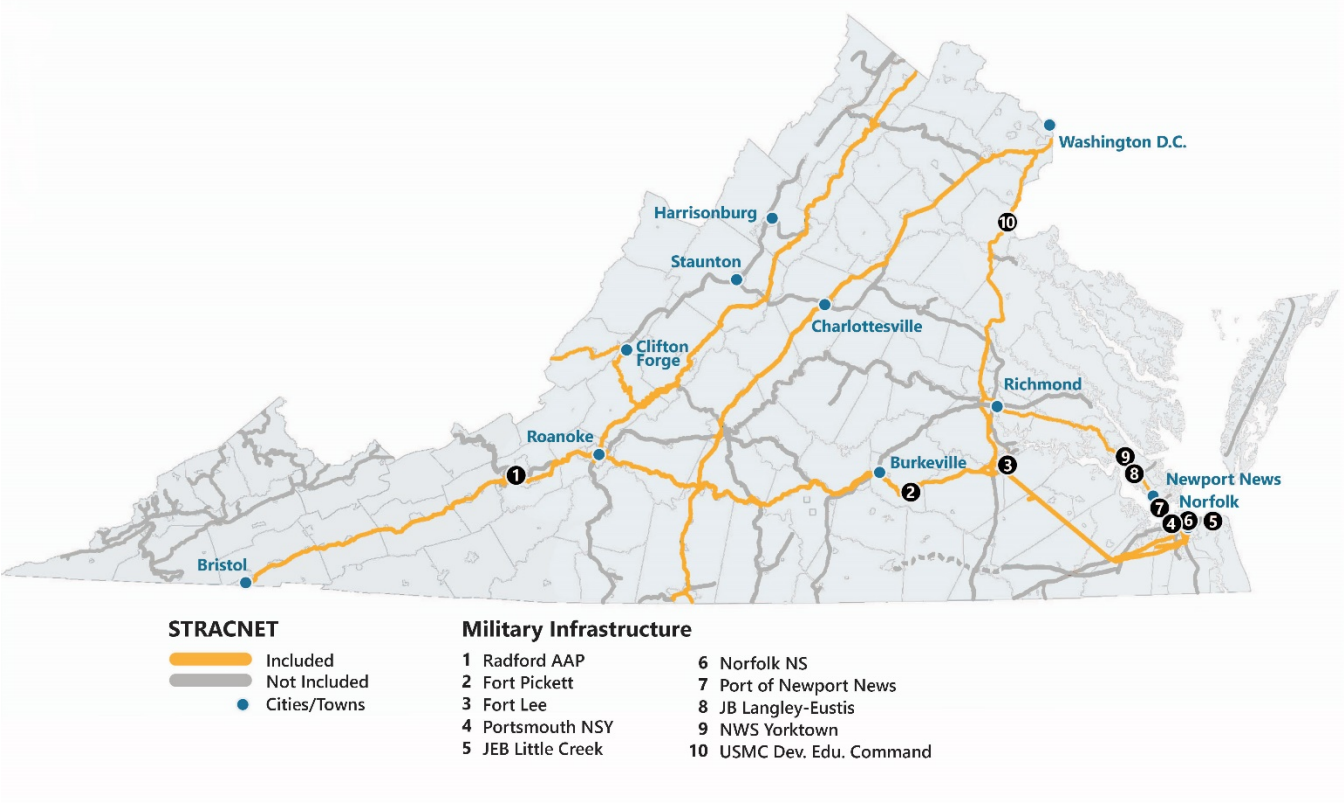
Since 2009, the concept of developing a National Rail Plan has evolved, and FRA has focused efforts toward the issues and priorities addressed in state rail plans. An outgrowth of this process is the development of regional rail plans and multi-state corridor plans inclusive of solutions for freight and passenger service issues on a regional rather than state-by-state basis. DRPT will continue to work with FRA and other states in the region directly and through the Southeast Rail Coalition to ensure that the rail perspectives and issues of the Commonwealth and region are adequately addressed within the national rail planning process.

National Strategic Rail Corridor Network

The U.S. Military Surface Deployment and Distribution Command's Transportation Engineering Agency oversees the federal National Strategic Rail Corridor Network (STRACNET).[2] STRACNET is an interconnected and continuous rail line network consisting of more than 36,000 miles of track serving more than 120 defense installations. The STRACNET network is shown in **Figure 5-4**. STRACNET was established as part of the federal Railroads for National Defense Program, which ensures the readiness capability of the national railroad network to support defense deployment and peacetime needs. The Transportation Engineering Agency works in conjunction with FRA, STB, state transportation departments, individual railroads, and two industry organizations, AAR and AREMA, to ensure that rail needs for the Department of Defense are identified and coordinated with the appropriate transportation authorities.

[2] https://www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/Pages/RailroadsNationalDefense.aspx

Figure 5-4: STRACNET Railroad Network



5.3 Rail Agencies

DRPT is the lead agency for rail planning and investments within Virginia. This State Rail Plan does not recommend any changes to the DRPT, nor does it recommend the creation or abolition of any other agencies or authorities. DRPT reports to the Office of the Secretary of Transportation, and the DRPT Director is a member of the CTB, which sets policy and allocates funding surface transportation modes in Virginia. DRPT rail staff work with the CTB to address policy issues and legislative issues on an on-going basis.

5.4 Program Effects

Virginia's rail network is part of a larger rail system within the eastern United States; it connects the Port of Virginia, businesses, and communities to other major population centers, customers, and manufacturing regions throughout the nation and the world. Transportation corridors within the Commonwealth have unique characteristics that provide viable transportation options and diverse public benefits to the economy. Many of Virginia's freight corridors also carry passenger trains. All of the rail corridors are privately-owned and serve the Port of Virginia in Hampton Roads in some capacity.

Passenger trips to, from, and within Virginia are growing, and highways in Virginia are increasingly congested. Passenger rail service provides an alternative to congested highways, and the Commonwealth therefore invests in Amtrak intercity passenger routes and VRE's service areas to add network capacity. Projects and plans underway in CSX's RF&P subdivision and the Long Bridge across the Potomac to Washington, D.C. will alleviate existing rail bottlenecks to better connect the entire Southeast region with Amtrak's Northeast Corridor. Trends for passenger and freight rail growth and demand are described in detail in **Chapters 2.2.2 and 2.2.3**.

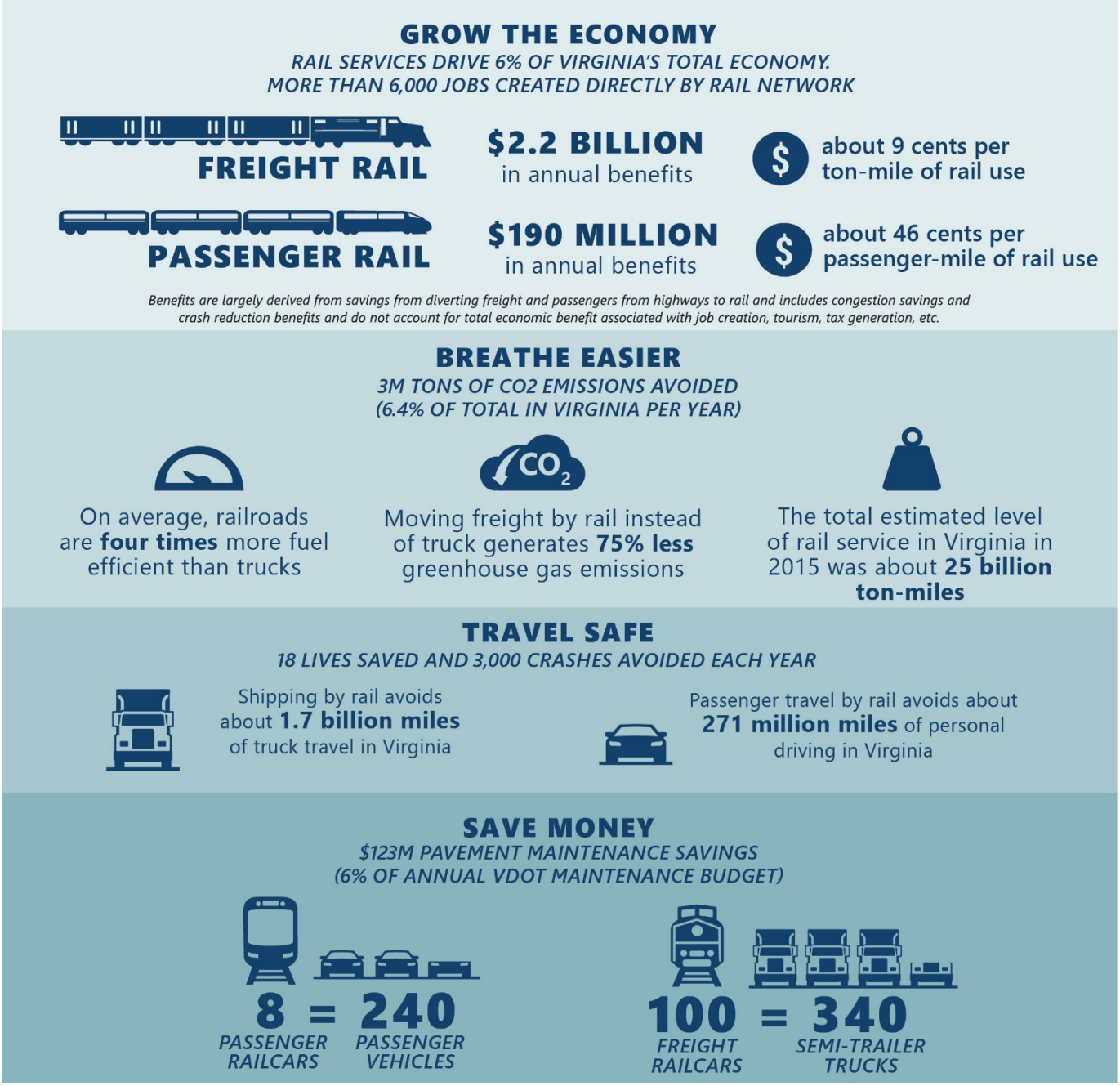
Since the 2013 Virginia State Rail Plan, the Commonwealth has provided dedicated funding to support and expand intercity passenger rail operations across the state. Virginia's busiest passenger rail routes parallel the heavily traveled I-95 corridor, where a growing number of Virginia Regional Amtrak trains serve Richmond, Newport News, and Norfolk. Additional Virginia Regional Amtrak services extend southwest from Washington, D.C. to Lynchburg and Roanoke. Virginia also supports commuter rail operations provided by Virginia Railway Express, which serves the heavily congested I-95 Corridor from Fredericksburg to Washington, D.C., as well as the I-66 Corridor between Manassas and Washington, D.C. A detailed description of the rail bottlenecks for both passenger and freight rail are in **Chapter 2.2.5**.

As the economy grows, so do the freight demands on Virginia's highways. The Commonwealth recognizes the public benefits and economic impact of investments in a multimodal freight transportation system. The freight rail network has a unique role supporting the Port of Virginia's target markets in the Midwest. Both CSX and NS intermodal corridors connect Virginia to the nation, and cost-effectively brings needed raw materials and products to our ports, manufacturers, and consumers, and carries Virginia-made products and materials to destinations throughout the nation. Each year, the rail network in Virginia carries over 800,000 carloads of coal, 534,000 carloads of mixed goods, 120,000 carloads of chemical products, 103,000 carloads of food products, and 85,000 carloads of pulp and paper products in Virginia, keeping over 5.5 million trucks off the highways. Savings in pavement maintenance costs alone are over $123 million (2016 dollars), almost 6% of VDOT's annual maintenance budget. The economic impacts and socio-environmental benefits of passenger and freight rail programs and projects in Virginia are detailed in **Chapter 2.1.7**.

Virginia's passenger and freight rail networks are affected by many external factors that drive demand for services. Freight rail corridors serving the Port of Virginia and the main north-south freight routes are experiencing growth in intermodal traffic, while changes in domestic energy production and use are reflected in a decrease in coal traffic through Virginia. Population growth, an aging population, and increasing highway congestion along the urban crescent in particular, is helping drive demand for environmentally friendly and safe alternatives to automobile travel. The Commonwealth invests in the rail network as part of a multimodal approach to meet the growing demand for freight and passenger

transportation service, and to support the economic changes and travel preferences of Virginians. As a result, Virginians benefit in the following ways shown in **Figure 5-5**.

Figure 5-5: Public and Private Economic Benefits of Passenger and Freight Rail



5.5 Passenger Elements

This chapter describes capital and operating financing plans for Virginia's passenger rail programs.

5.5.1 Passenger Rail - Capital Financing Plan

Virginia's funding mechanisms for passenger rail were identified in **Chapter 1** and **Chapter 2** of the State Rail Plan. All of Virginia's passenger rail services operate over the infrastructure of private freight rail carriers, allowing the state to combine funding from both public and private sources to deliver projects with joint passenger and freight rail benefits. Virginia uses the following funding sources for rail capital projects:

- IPROC
- REF
- Private railroad funds
- Other local or regional match
- Federally-administered rail funding

For the short-range horizon funding has been allocated for passenger rail improvements through DRPT's SYIP.

5.5.2 Passenger Rail - Operating Financing Plan

Amtrak has sole fiscal responsibility for long-distance routes through Virginia; however, the Commonwealth is financially responsible for the capital and operating costs associated with regional intercity passenger rail service originating in Virginia. Virginia's state-sponsored rail operations are funded through the IPROC Fund. Virginia's commuter rail service, VRE, is funded through other federal and state transportation funds, in addition to matching local funds.

For the long-range horizon (20 years), some funding has already been allocated for improvements that support passenger rail improvements in years 5 and 6 through DRPT's Fiscal Year 2018 SYIP. This is done through State-sponsored funding (IPROC and REF funds), along with other federal and local matching funds. The IPROC fund, established in 2011, helped to create a dedicated state revenue source for intercity passenger rail needs.

Additionally, passenger fares and other revenues are used to defray a portion of passenger rail operating costs. However, as with other transportation modes, both commuter and intercity rail require a subsidy to support capital and ongoing operating costs. The subsidy required ranges based on the type of service desired.

5.5.3 Passenger Rail - Benefits

Public and private economic benefits of passenger rail are identified in **Chapter 2.1.7**.

5.6 Freight Elements

5.6.1 Freight Rail - Capital Financing Plan

Class I railroad companies in Virginia use private financing to cover the cost of routine maintenance. However, the REF program is available to help fund the Class I rail network improvement projects; providing there is a proven benefit to the Commonwealth.

Shortline railroads typically rely upon private funding, public funding, or some combination of these sources to cover the capital cost of equipment acquisition and general infrastructure improvements. Rail Industrial Access funds, the REF program, and the Shortline Railway Preservation and Development program are available to shortline freight railroads to fund state-of-good-repair projects and rail network improvement projects.

5.6.2 Freight Rail - Benefits

5.6.2.1 Proposed Short-Range Freight Projects

The freight projects included in the Short-Range Program include projects that build on Virginia's past rail investments and prioritize congested corridors. These projects include those in the Commonwealth's SYIP.

5.6.2.2 Proposed Long-Range Freight Projects

The freight projects included in the Long-Range Program are more diversified, larger in scale and cost than most short-range projects, and have strategic importance to long-term economic success of the Commonwealth. Thus, the expected benefits from these projects are typically larger and have greater overall impacts. The range of projects involve mainline capacity expansion, accommodating new and expanded passenger services by removing freight rail bottlenecks and adding track capacity; track, signal, and bridge infrastructure upgrades; industrial access and port connectivity; and grade crossing improvements and upgrades.

Public and private economic benefits of freight rail are discussed in **Chapter 2.1.7**.

5.7 Rail Studies and Reports

Coordination with stakeholders, elected officials, the CTB, and comments from the general public have resulted in the Rail Plan's recommendations for policies and studies to guide short-term and long-term investments. **Chapter 5.8** describes the rail studies, reports, and policies that will guide future projects.

One policy of note is the Intercity Passenger Rail Station Policy. DRPT developed an Intercity Passenger Rail Station Policy as part of the Rail Plan effort to assist localities and other public entities when they prepare a proposal for:

- Adding a new station to an existing intercity passenger rail route;
- Modifying an existing station along an existing intercity passenger rail route; and,
- Adding a new station where service does not yet exist.

DRPT gathered input and best practices from multiple rail owners and operators, other states with similar policies, and federal regulators. The Policy lays out a methodology for DRPT and the CTB to evaluate proposals for stops, and provides guidance on the roles and responsibilities of a locality to fund and maintain a successful station. It also outlines necessary coordination efforts required with rail service partners like Amtrak, FRA, and the host railroads. The Intercity Passenger Rail Station Policy developed as part of the State Rail Plan is in **Appendix O**.

5.8 Passenger and Freight Rail Capital Program

Virginia's capital program invests in short-range and long-range programs and studies to meet the goals and initiatives of the State's rail program. A summary of the rail program expenditures over FY 2018 through FY 2023 is included in **Table 5-1** to illustrate Virginia's commitment to providing a robust multimodal transportation network. These projects reflect the list of short-term projects in **Table 5-2** and the SYIP.

Table 5-1: Rail Program Allocations, FY 2018 through FY 2023[a]

Fund	Category	Previous Allocations	FY18	FY19	FY20	FY21	FY22	FY23
RPF	Total State Share - Allocated Projects	$40,585,605	$10,548,094	$6,069,392	$4,266,024	$3,468,243	$1,008,904	$532,317
	Total State RPF Funds Available		$13,393,248	$6,734,104	$4,553,662	$4,176,588	$4,597,295	$7,477,341
	Total State RPF Funds Unobligated		$2,845,154	$664,712	$287,638	$708,345	$3,588,391	$6,945,024
REF	Total State Share - Allocated Projects	$111,559,973	$58,434,494	$22,905,775	$16,023,889	$5,227,178	-	-
	Total State REF Funds Available		$67,469,094	$29,154,850	$27,141,325	$31,967,436	$47,578,258	$68,422,258
	Total State REF Funds Unobligated		$9,034,600	$6,249,075	$11,117,436	$26,734,258	$47,578,258	$68,422,258
IPROC	Total State Share - Allocated Projects	$159,733,583	$86,740,150	$51,323,750	$52,368,750	$53,352,000	$56,677,000	$57,760,000
	Total State IPROC Funds Available		$86,740,150	$51,323,750	$52,368,750	$53,352,000	$56,677,000	$57,760,000
	Total State IPROC Funds Unobligated	-	-	-	-	-	-	

Source: DRPT

a In 2016 dollars

Table 5-2 and **Table 5-3** identify DRPT's short-range and long-range projects and studies consistent with PRIIA requirements. The tables highlight the Virginia State Rail Plan goals furthered by each project, which reflects the project's benefits and effects to the transportation system. The short-range projects and studies include those identified in the DRPT SYIP, including those current projects with previous allocations and those funded between FY 2018 through FY 2023. The long-range projects and studies are those between FY 2024 and FY 2042; these include a financially unconstrained list of potential initiatives identified by DRPT and our planning partners.

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Various	Operating Costs for Virginia Regional Intercity Passenger Rail Service	$88.38 m	✓	✓	✓				✓	✓
Various	Capital Equipment Contributions for Virginia Regional Intercity Passenger Rail Service	$31.34 m	✓	✓	✓				✓	
Various	DRPT Passenger Rail Station Policy	TBD	✓	✓	✓	✓	✓	✓	✓	
Richmond, Northern Virginia, Fredericksburg	I-95 Corridor Improvements – Atlantic Gateway	$535.32 m	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia, Fredericksburg, Richmond	Long Bridge NEPA Project Planning	$4.10 m	✓	✓	✓	✓	✓	✓	✓	✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Northern Virginia, Fredericksburg, Richmond	I-95 Corridor MAS 90 Tier II EIS/PE (DC2RVA)	$55.39 m	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia, Fredericksburg, Richmond	Planning for the RF&P Corridor	$3.50 m	✓	✓		✓		✓	✓	✓
Northern Virginia	Crystal City Platform Study	$1.01 m	✓	✓		✓			✓	✓
Northern Virginia	L'Enfant Platform Study	$3.18 m	✓	✓		✓			✓	✓
Fredericksburg, Northern Virginia	Brooke, Leeland, Potomac Shores Station Expansion Study and Design	$4.03 m	✓	✓		✓			✓	✓
Fredericksburg, Northern Virginia	Brooke, Leeland, Potomac Shores Station Expansion Construction	$30.89 m	✓	✓		✓			✓	✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Northern Virginia	Quantico Station and Track Work	$13.60 m	✓	✓		✓			✓	✓
Fredericksburg, Northern Virginia	Arkendale to Powells Creek Third Track Construction and Island Platforms	$26.56 m	✓	✓	✓				✓	✓
Richmond	Acca Yard, Carson to Reams, Crossover Improvements	$132.0 m	✓	✓	✓				✓	✓
Richmond	Staples Mill Parking Lot Expansion	$8.34 m	✓	✓					✓	✓
Hampton Roads	Bland Boulevard, Newport News Station Platform, Terminal Track, Turning, and Storage Facility	$20.0 m	✓		✓	✓			✓	✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Hampton Roads	Branchville Siding Extension	$8.60 m	✓	✓		✓			✓	✓
Hampton Roads, Richmond	Norfolk Passenger Train Capital Costs	$3.29 m	✓		✓	✓			✓	✓
Lynchburg, Salem	Improvements Lynchburg to Roanoke for Extension of Service	$102.12 m	✓	✓		✓		✓	✓	✓
Lynchburg, Culpeper, Northern Virginia	Lynchburg Second Passenger Train Capital Improvements	$53.64 m	✓		✓	✓			✓	✓
Lynchburg, Culpeper, Northern Virginia	Lynchburg to Alexandria Speed Improvements	$9.19 m	✓		✓				✓	✓
Salem, Bristol, Staunton	Montgomery Tunnel	$5.10 m	✓	✓		✓				✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Salem, Bristol, Staunton	Clark Siding	$7.80 m	✓	✓		✓			✓	✓
Salem, Bristol, Staunton	Glade Spring Siding	$6.60 m	✓	✓		✓			✓	✓
Salem	Land Acquisition for Roanoke Train Station	$0.47 m	✓						✓	✓
Lynchburg, Northern Virginia	Rail Traffic Control Model Study – Lynchburg Second Train	$0.33 m	✓		✓	✓				✓
Salem, Bristol	Rail Traffic Control and Modeling Study for NRV/Bristol Passenger Extension	$0.35 m	✓		✓	✓				✓
Hampton Roads	NIT Central Rail Yard Expansion	$12.05 m	✓	✓		✓			✓	✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Richmond	Port of Richmond Rail Improvements	$3.24 m	✓	✓					✓	✓
Hampton Roads	Commonwealth Railway Marshalling Yard Expansion	$24.35 m	✓	✓		✓			✓	✓
Hampton Roads	Rehabilitation of SunRay-Portlock and Bridge 6.8	$2.03 m	✓	✓						✓
Staunton	Virginia Inland Port Capacity Expansion – Front Royal	$5.70 m	✓			✓				✓
Hampton Roads	Center Point Intermodal Center	$8.80 m	✓			✓			✓	✓
Staunton	Chesapeake and Western Span Upgrade	$0.30 m	✓	✓						✓
Piedmont	Performance Feed Mainline Track Upgrade	$0.56 m	✓	✓						✓
Fredericksburg, Richmond	Norfolk Southern F-Line Clearance	$2.50 m	✓	✓	✓				✓	✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Hampton Roads	BCR Tie Replacement and Upgrade	$0.88 m		✓						✓
Culpeper and Staunton	BB Richmond and Alleghany Division Tie Replacement – 116,000 Wood Mainline/Switch Associated Ballast/Tamping/ Surfacing 116 miles	$13.20 m		✓						✓
Richmond, Culpeper, Staunton	BB Richmond and Alleghany Division Track, Surface, and Subsurface Improvements	$5.40 m	✓	✓						✓
Lynchburg	BB Dillwyn - Buckingham Division Rail Replacement and Tie Replacement Ballast, and Surfacing Public Crossings Rehab, Dillwyn Tie	$ 3.70 m		✓						✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
	Replacement									
Lynchburg	BB Virginia Southern Division Bridge and Track Upgrade	$11.09 m	✓	✓						✓
Culpeper	BB Piedmont Subdivision Rail Upgrade	$2.50 m		✓						✓
Lynchburg	BB Buckingham Division Bridge Upgrade MP 9.6	$0.08 m		✓						✓
Lynchburg	BB Buckingham Division Bridge Improvements	$0.40 m		✓						✓
Culpeper	BB Charlottesville Yard Upgrade	$2.05 m		✓						✓
Culpeper and Staunton	BB North Mountain Division Switch Heater Replacement – Phase II	$0.50 m		✓						✓
Richmond, Culpeper, Staunton	BB Richmond and Alleghany Division Tie Replacement	$10.00 m	✓	✓		✓				✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Lynchburg	BB Buckingham Division Tie and Rail Replacement	$2.00 m		✓						✓
Richmond, Culpeper, Staunton	BB Richmond and Alleghany Division Bridge Upgrades (13)	$1.80 m	✓	✓						✓
Culpeper, Staunton	BB North Mountain Division Tie Replacement, Afton Tunnel	$1.30 m		✓						✓
Culpeper, Staunton	BB North Mountain Division Switch Heater Replacement – Phase III	$0.70 m		✓						✓
Culpeper, Staunton	BB North Mountain Division Reduction of Ice Formation, Afton Tunnel	$0.35 m		✓						✓
Lynchburg	BB Richmond and Alleghany Division Signal System	$0.48 m		✓		✓				✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
	Improvements									
Richmond, Culpeper, Staunton	BB Richmond and Alleghany Division Install Wayside Lubricators	$0.50 m		✓		✓				✓
Lynchburg	BB Virginia Southern Division Bridge Improvements	$0.99 m		✓						✓
Richmond, Culpeper, Staunton	BB Richmond and Alleghany Division Replace Siding and Industry Turnouts	$1.62 m	✓	✓						✓
Hampton Roads	CWRY Tie and Rail Replacement	$1.97 m		✓						✓
Hampton Roads	CWRY Track Infrastructure Rehab Improvement, Bridge 16.4	$0.60 m		✓						✓
Hampton Roads	CWRY Six-Year Track Infrastructure Rehab	$3.71 m	✓	✓						✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
	Improvement									
Hampton Roads	NPB Yard Improvements	$3.28 m		✓						✓
Hampton Roads	NPB Programmatic Bridge Repairs	$0.20 m		✓						✓
Hampton Roads	NPB Virginia Yard Expansion	$3.20 m		✓						✓
Hampton Roads	NPB Poindexter Street Crossing	$0.15 m		✓						✓
Hampton Roads	NPB Tie Upgrade Project – Port Norfolk to Mainline Bridge	$0.40 m		✓						✓
Hampton Roads	NPB Tie Upgrade Project – South Berkley Yard to End of Elizabeth River Mainline	$0.50 m		✓						✓
Hampton Roads	NPB Rehab Port Norfolk Yard	$1.10 m		✓						✓
Hampton Roads	NPB Precon Siding Project	$0.63 m		✓						✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Hampton Roads	NPB Redeck Elizabeth River Bridge #2 Southern Branch	$0.32 m		✓						✓
Hampton Roads	NCVA Six-Year Track Improvement and Upgrade	$1.43 m		✓						✓
Staunton	SV Tie Replacement and Upgrade	$0.88 m		✓						✓
Staunton	SV Track Bed Upgrade and Tie Replacement	$0.99 m		✓						✓
Staunton	SV Bridge 129 Repairs	$0.63 m		✓						✓
Staunton	SV Tie Replacement and Track Bed Repairs	$0.20 m		✓						✓
Staunton	SV Track Bed Upgrade and Tie Replacement	$0.55 m		✓						✓
Staunton	SV Staunton Yard South Extension	$0.35 m		✓						✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Staunton	SV Staunton Yard Interchange Capacity Improvements	$0.24 m		✓		✓				✓
Staunton	SV Six-Year Bridge Upgrade and Repair	$0.89 m		✓						✓
Staunton	SV NS Interchange at Scholars Road	$0.38 m		✓						✓
Staunton	SV VDOT Grade Crossing	$0.12 m		✓						✓
Staunton	SV VDOT Cut MP 23.5 Mud Track	$0.21 m		✓						✓
Staunton	SV Mt. Crawford Siding Rail Upgrade	$0.08 m		✓						✓
Staunton	SV Verona Siding Project	$0.34 m		✓						✓
Staunton	SV Track Bed Upgrade and Replacement, MP 21.0-25.0	$0.36 m		✓						✓
Staunton	SV Keezletown Grade Crossing	$0.17 m		✓						✓
Staunton	WW Tie/Rail Replacement,	$4.44 m		✓						✓

Table 5-2: Short-Range Program of Passenger and Freight Projects, Current through FY23

			Goals							
District	**Project**	**Total Programmed, Current through FY23***	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
	Surfacing, Crossing									
Staunton	WW Capacity Upgrade/Yard Improvements	$4.38 m		✓						✓
Staunton	WW Rail Replacement and Bridge Deck Renewal	$3.68 m		✓						✓
Staunton	WW Replace Winchester Interchange and Siding Turnout	$0.36 m		✓						✓

** Total Programmed = Previous Allocations plus FY18 through FY23*
Source: DRPT

Table 5-3: Long-Range Potential Passenger and Freight Projects, FY 2024 through FY 2042

			Goals							
District	**Project**	**Planning Level Cost Estimate (where available)**	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Northern Virginia	Long Bridge Capacity Improvements	TBD	✓	✓	✓	✓	✓	✓	✓	✓
Richmond, Northern Virginia, Fredericksburg	Washington to Richmond SEHSR Construction	TBD	✓	✓	✓	✓	✓	✓	✓	✓
Richmond	Richmond to Raleigh SEHSR Construction	TBD	✓	✓	✓	✓	✓	✓	✓	✓
Hampton Roads, Richmond	Richmond to Hampton Roads SEHSR Tier II Study, Goals, and Construction	TBD	✓	✓	✓	✓	✓	✓	✓	✓
Richmond	Tri-Cities SEHSR Multimodal Station Construction	TBD	✓		✓	✓		✓	✓	✓
Salem	Roanoke Second Amtrak Train	TBD	✓		✓	✓			✓	✓
Salem	Roanoke to New River Valley Amtrak Service Extension	TBD	✓		✓	✓			✓	✓
Salem, Bristol	New River Valley to Bristol Passenger Service Extension	TBD	✓		✓	✓			✓	✓

Table 5-3: Long-Range Potential Passenger and Freight Projects, FY 2024 through FY 2042

			Goals							
District	**Project**	**Planning Level Cost Estimate (where available)**	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Richmond, Culpeper	Richmond to Charlottesville Passenger Service Expansion	TBD	✓		✓	✓			✓	✓
Richmond, Lynchburg	Richmond to Lynchburg Passenger Service Expansion	TBD	✓		✓	✓			✓	✓
Lynchburg	Lynchburg to Charlotte Passenger Service Extension	TBD	✓	✓	✓	✓			✓	✓
Various	Amtrak Operating Costs and Capital Equipment Contribution Costs for Virginia Regional Intercity Passenger Rail Service	TBD	✓	✓	✓				✓	
Various	DRPT Passenger Rail Station Management Policy	TBD	✓		✓	✓	✓	✓	✓	
Various	DRPT Passenger Rail Station Facility and Connectivity Policy	TBD	✓		✓	✓	✓	✓	✓	✓

Table 5-3: Long-Range Potential Passenger and Freight Projects, FY 2024 through FY 2042

			Goals							
District	**Project**	**Planning Level Cost Estimate (where available)**	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Various	Amtrak Virginia Service Enhancement Study	TBD	✓	✓	✓	✓	✓		✓	
Various	Track and Bridge Infrastructure Upgrades	TBD	✓	✓						✓
Various	Inland Ports Study	TBD	✓	✓				✓		✓
Statewide	Statewide Grade Crossing Improvement and Upgrade Projects (Federal)	$80 m		✓						
Statewide	Statewide Grade Crossing Improvement and Upgrade Projects (State)	$80 m		✓						
Northern Virginia	VRE Widen Long Bridge for Additional Rail Capacity	$700.30 m	✓	✓	✓	✓	✓	✓	✓	✓

Table 5-3: Long-Range Potential Passenger and Freight Projects, FY 2024 through FY 2042

			Goals							
District	**Project**	**Planning Level Cost Estimate (where available)**	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Fredericksburg	VRE Fredericksburg Line Rail Capacity Improvements	$862.70 m	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia, Fredericksburg	VRE Fredericksburg and Manassas Line Off-Peak Service	TBD	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia, Fredericksburg	VRE Implement integrated regional VRE/MARC run-through rail service	TBD	✓	✓	✓	✓	✓	✓	✓	
Northern Virginia	VRE Alexandria-D.C. Rail Capacity Improvements	$294.23 m	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia	VRE Alexandria Passenger Station Improvements	$33.03 m	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia	VRE Manassas Line Rail Capacity Enhancements	$498.65 m	✓	✓	✓	✓	✓	✓	✓	✓

Table 5-3: Long-Range Potential Passenger and Freight Projects, FY 2024 through FY 2042

			Goals							
District	**Project**	**Planning Level Cost Estimate (where available)**	**Optimize Investments**	**Ensure Safety**	**Program Efficiency**	**Prioritize Operations/Demand**	**Ensure Accountability**	**Coordinate Transportation/Land Use**	**Ensure Efficient Intermodal Connections**	**Support Regional Development**
Fredericksburg	VRE Fredericksburg Line Service Expansion	$161.55 m	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia, Fredericksburg	VRE Fredericksburg Line Peak Period Service Expansion	$216.15 m	✓	✓	✓	✓	✓	✓	✓	✓
Northern Virginia	VRE Manassas Line Peak Period Service Expansion	$126.75 m	✓	✓	✓	✓	✓	✓	✓	✓
Richmond	Ashland Station Passenger Information Display System	$0.4 m		✓					✓	

Source: DRPT

VIRGINIA
STATEWIDE RAIL PLAN

CHAPTER 6

PUBLIC INVOLVEMENT AND COORDINATION

December 6, 2017

CONTENTS

TABLES

6 Introduction

DRPT actively engaged stakeholders at the earliest stages of the State Rail Plan. Stakeholders are identified as individuals, organizations, and groups affected by or having an interest in particular projects or actions. For the rail and freight plans, stakeholders included:

- shippers
- modal operators
- transportation academics
- logistics organizations and service providers
- current and potential rail passenger users
- various industrial and manufacturing sectors
- state, regional, county and city government agencies
- elected and appointed public officials
- economic development and business interests
- special interest and advocacy groups
- general public.

Stakeholder involvement included participation in freight and rail planning activities, identifying the rail and freight priorities and goals for Virginia, identifying issues, needs and potential investments for freight and rail, and helping to define policies and performance metrics for freight and rail to ensure improved freight and rail service into the future.

Specific, targeted outreach efforts were undertaken by DRPT to include participation from key rail and freight stakeholder groups. Stakeholders received email invitations and phone calls that corresponded with each outreach activity. Stakeholder committee attendees received an email invitation from DRPT. Stakeholders were asked to recommend individuals for shipper interviews. Those who participated in the shipper interviews received notification through phone calls and emails.

6.1 Stakeholder Engagement

Stakeholder engagement activities informed DRPT's understanding of current passenger and freight rail movements and issues throughout the state. Outreach efforts included the creation of the State Rail Plan Stakeholder Committee, hosting web-based surveys and facilitating shipper interviews.

6.1.1 State Rail Plan Stakeholder Committee

The State Rail Plan Stakeholder Committee was formed early in the project, through invitation by DRPT. The committee was organized to help in the identification of passenger and freight rail needs, short and long term goals and strategies for improvements, and location-specific improvement projects relative to each goal once defined. Committee members included representatives from DRPT, industries related to freight and rail transportation, MPOs/TPOs, and special interest groups. **Appendix P, Appendix Q,** and **Appendix R** contain the State Rail Plan Stakeholder Committee meeting summaries and invitee lists.

The first committee meeting was held on Tuesday, November 22, 2016, in Richmond, Virginia. The November meeting focused on three interactive exercises that consisted of identifying passenger and freight rail bottlenecks and related opportunities for economic development in Virginia, prioritizing the types of passenger and freight rail projects needed in Virginia, and determining the level of effort and impact of the State Rail Plan strategies.

The second committee meeting was held Thursday, April 13, 2017, in Richmond, Virginia. This meeting's purpose was to identify the objectives in the State Rail Plan, review the economic development impact of rail, and prioritize the types of passenger and freight rail projects needed in Virginia.

The third committee meeting was held Tuesday, October 17, 2017, in Richmond, Virginia. This final meeting with stakeholders provided an overview of the Draft State Rail Plan and focused on reviewing the annotated version of the executive summary and discussing thoughts and perspective from the group on the draft plan.

6.1.2 Virginia State Rail Plan Web Page

A project webpage, *www.varailplan.org*, was established to serve as an online information center for all potential stakeholders providing information about the Plan. The webpage provides general information regarding the plan and includes workshop summaries, workshop presentations, and survey results.

6.1.3 Online Survey

DRPT launched three public State Rail Plan online surveys through DRPT's Facebook page. DRPT's intention is to launch a fourth survey at completion of the Virginia State Rail Plan. The surveys were organized by the following topics:

1. Virginia State Rail Plan: Introduction
    a. November 11, 2016 – January 9, 2017

   b. Total respondents: 107
2. Economic Development
   a. January 24, 2017 – March 8, 2017
   b. Total respondents: 41
3. Passenger Rail
   a. March 10, 2017 – May 4, 2017
   b. Total respondents: 36

The surveys served as an additional platform for stakeholders to offer their feedback on the State's rail network. A summary of the survey results appear in **Appendix S**.

6.1.4 Passenger Rail Shipper Interviews

DRPT conducted seven interviews of passenger rail user groups in Virginia by phone during March 2017. The interview subjects consisted of four regional MPOs/TPOs representing many of the largest population centers in the Commonwealth, two local transit providers, and two passenger rail advocacy groups based in Virginia. Each interview was confidential and lasted less than one hour, and each participant was asked the same questions. Notes prepared during the interview were provided to the interviewee with the opportunity to clarify or correct information he/she had provided. The revised notes were used as the basis for this summary report. One of the seven organizations declined to have their interview responses shared; therefore, the report summarizes the responses from the six remaining interview participants. The information provided in the interviews is located in **Appendix S**.

6.1.5 Freight Rail Shipper Interviews

Freight rail shippers are typically described as cargo owners that originate or receive freight shipped by rail. Private sector freight rail shippers in Virginia served by Class I and shortline railroads were contacted by DRPT during development of the State Rail Plan via a telephone interview process in May and June 2017. Shippers interviewed used Class I and shortline railroads, trucks, barges, and oceangoing vessels to transport their freight. Respondents included a port, an agricultural processor, an aggregate shipper, bulk transloaders, and a chemical manufacturer.

A structured interview document was sent to each respondent in advance of the phone interview. Questions were developed to learn current usage, attitudes, and opinions about current rail service, rail access, and the freight system, as well as what could potentially be done to improve it. General interview themes included:

- Type of Business

- Reasons for Utilization of Rail Shipping
- Access to Competition
- Rail Service Satisfaction
- Potential Rail Service Improvement Projects
- State Programs and Regulations
- Future Outlook

After each interview, DRPT provided the completed draft interview document to the respondent for his/her review and comments before finalizing. The information provided in the freight rail shipper interviews is located in **Appendix T**.

6.1.6 Railroad Interviews

Virginia's Class I and shortline railroads were contacted during development of the State Rail Plan to solicit input. Topics addressed included:

- Descriptions of physical and operating characteristics and operations of each railroad's network within Virginia;
- Past and potential future capital projects aimed at improving operational efficiency, capacity, and safety, and providing enhanced service to rail shippers; and,
- A list of improvement and infrastructure needs for shortline railroads, which often do not possess the financial and technical resources of the Class I railroads.

Specific needs identified by the shortline railroads are presented in **Chapter 2**, and potential projects to address these needs are included in the Rail Service Investment Plan presented in **Chapter 5**.

6.1.7 Coordination with Neighboring States

DRPT routinely interacts with neighboring states through involvement in national and regional transportation organizations to address specific transportation service and facility issues and planning initiatives. Specifically, these include such groups as the I-81 Corridor Coalition, I-95 Corridor Coalition, Standing Committee on Rail Transportation, FRA's Southeast Regional Rail Stakeholder Committee, and others. In addition, during stakeholder workshops and interviews, DRPT learned more about the trends, best practices, and lessons learned of multi-state planning.

6.1.8 Public Meetings

DRPT hosted an online public meeting at the completion of the Draft State Rail Plan, at *http://vastaterailplanonlinemeeting.com*. The online meeting was available between October 2 and November 3, 2017 and was utilized by 54 total users. The online meeting included the Draft State Rail

Plan document and a summary presentation of the plan development process. A link to provide comments on the State Rail Plan was also included.

6.1.9 Public and Stakeholder Written Comments

DRPT received several comments by e-mail and web comment forms during the course of the State Rail Plan's development. Comments were received from members of the public, railroads, the FRA, and public transportation planners, among others.

6.2 Input Received from the Stakeholder Engagement Process

Information gathered from stakeholder engagement was used to inform DRPT's development of a number of the State Rail Plan components including the plan's vision, goals, and objectives. The following chapters include summaries of the themes raised during the outreach process regarding existing rail issues at the local, regional, and/or state levels. Suggestions and/or actions possible in the future are also included. Input received is organized into the themes summarized in **Table 6-1**:

Table 6-1: Themes from Stakeholder Input

Theme	Issues Identified	Reference Chapters
General benefits, opportunities, and threats	Participants indicated that the following areas have heavy road congestion, and additional rail transportation options could help alleviate that issue: Alexandria, Richmond, Interstate 66 through Manassas, and City of Norfolk and the Port of Virginia. Participants indicated the need to describe the role of multi-state cooperatives in improving rail transportation in Virginia. Participants provided input on the drivers for rail transportation in Virginia. Participants indicated the following projects had potential economic development opportunities: • A new passenger rail station in Richmond • A new passenger rail station in Petersburg • Grade separation projects in the Norfolk area • Increased passenger rail routes from Bristol, Roanoke, and Charlottesville	---
Financing	Additional funding sources for Virginia rail projects in the state based on importance and economic value to Virginia.	Chapter 2
Commuter rail passenger service	Opportunity for short trips, intra-state, commuting to and from work, and focusing on timetables so that travelers can set a return trip the same day. Prioritizing more frequent passenger rail service on existing routes,	Chapter 3

Theme	Issues Identified	Reference Chapters
	improving stations, and creating additional transit connections to improve multi-modal access.	
Freight	Alleviating rail network bottlenecks.	Chapter 4
Safety and Security	Make infrastructure investments to extend or construct new sidings, multiple main tracks, track and bridge upgrades, and wayside signal system upgrades. These upgrades were requested to allow the rail network to fully accommodate 286,000 lb. rail cars.	Chapter 5
Economic Development	New or enhanced intermodal facilities, multimodal connections, and transload facilities. Regional transload facilities act as a collection facility for predominantly bulk commodities, and typically involve a combination of rail and truck freight movement.	Chapter 5
Environmental Protection	Long and medium distance passenger and freight movements by rail generally have less impact to the environment than similar movements by motor vehicle, notably through reduced air emissions and energy use. General belief that green initiatives have not worked in the past. Potential future initiatives to promote technology advances in this sector could include the operations of additional low-emissions locomotives on the state's railroads. Offer education and incentives for the State's current and future rail shippers and receivers to re-evaluate their transportation choices.	Chapter 5

The role of public agencies in Virginia surfaced in focus group discussions and survey results when discussing economic development, as many state agencies support economic development through various policies, programs, and initiatives. Further details about the existing role of public agencies in Virginia can be found in **Chapter 1**.

6.3 Consideration of Recommendations Identified During the Rail Plan Process

The comments and recommendations received through all aspects of the public outreach process conducted during development of the State Rail Plan have been reviewed and incorporated appropriately into the State Rail Plan. Input from the stakeholder groups and comments obtained through the outreach process identified several actions that DRPT could take to address rail-related issues in the state. These recommended actions include:

- Utilizing REF programs to increase return on investment.
- Identifying short-term and long-term passenger projects.
- Opening up the Rail Industrial Access Program to potential customers in the rail business.
- Assisting businesses who want to upgrade a private track.
- Creating awareness of the opportunities available for potential rail shippers who are interested in switching from truck to rail.
- Identifying the way the Industrial Access Program budget can be spent.
- Working with the states that surround Virginia to ensure the rail lines beyond Virginia's borders are improving in tandem with Virginia's rail lines.

6.4 State Rail Planning Coordination

At the regional, state, and local level, DRPT works with the CTB, MPOs, cities and counties to coordinate rail transportation planning and development efforts. Some of these agencies participated in the Virginia State Rail Plan development process and had the opportunity to provide further input through review and comment on the Draft State Rail Plan. Additional information on Virginia's coordination at the regional, state, and local levels is described in Chapter 1.3.4 and 1.3.5.

Virginia coordinates its state transportation planning and associated processes with other transportation planning programs and activities of the state and metropolitan areas in accordance with federal law[1]. Federal planning code:

- requires coordination of transportation planning and processes between state departments of transportation, MPOs, and public transit operators;
- encourages economic development and environmental sustainability for transportation; and,
- promotes integration of the management and operation of transportation systems and facilities to ensure an intermodal transportation system for the U.S. and the states establishes requirements for long-range transportation planning.

[1] Title 23 of U.S. Code Sections 134 and 135; Title 49 of U.S. Code Sections 5303 and 5304

Intercity Passenger Rail Station Policy

Purpose

The purpose of this policy is to assist localities and other public entities preparing to submit a proposal for an intercity passenger rail station to the Virginia Department of Rail and Public Transportation (DRPT).

It is also intended to guide the Commonwealth Transportation Board (CTB) and DRPT with decisions when evaluating a proposal.

Background

Within the Commonwealth of Virginia, DRPT is the lead agency for rail and public transportation. DRPT provides operating support for four routes which are operated by Amtrak on privately owned freight railroads.

The Intercity Passenger Rail Operating and Capital (IPROC) Fund provides state operating funds as well as funding for capital improvements necessary for new and enhanced services. DRPT has taken an incremental approach to expanding and enhancing passenger rail services. This ensures scarce funding resources are spent wisely, and allows the Department to evaluate the incremental impact of each project on the existing state-supported routes.

Since 2009 DRPT has funded infrastructure improvements and provided operating support for Amtrak state-supported routes. As service has expanded across the Commonwealth the demand for new stations has grown. There are generally three categories for station proposals which this policy guide will address:

- Adding a new station to an existing intercity passenger rail route;
- Modifying an existing station along an existing intercity passenger rail route;
- Adding a new station where service does not yet exist.

This policy guide does not guarantee approval of a proposal. It defines the roles and responsibilities of stakeholders, provides a breakdown of station cost factors, sets out considerations for a proposal, and outlines the process and expectations set forth by the CTB.

There may be circumstances where a proposal is brought forth as a state initiative. DRPT may also work with a locality and a region on a DRPT initiated station proposal.

Stakeholders – Roles and Responsibilities

There are multiple stakeholders with specific roles who should be part of the consideration of a proposed station, and the impact of a station on a community, ridership, and the rail network. Stakeholders commonly include, but are not limited to:

- **DRPT** – DRPT has existing operating agreements with Amtrak, and close working relationships with the Host Railroads. DRPT will work with localities, MPOs, and PDCs through the Proposal Phase to develop concepts for a station, and then facilitate discussions with the passenger rail service providers (Amtrak/VRE) and the Host Railroads after consultation with the Commonwealth Transportation Board.

- **Project Sponsor** – Localities, Metropolitan Planning Organizations (MPO), Planning District Commissions (PDC), and DRPT can be a Project Sponsor. However, unless a proposal is initiated by DRPT, the local government must take a lead role in the proposal with regional support from the MPO and PDC. The locality must demonstrate a commitment to the land use and multimodal planning efforts that create a successful station (see Expectations of a Successful Station). The locality is also responsible for developing a funding plan that addresses construction of the station and the long term operation and maintenance (O&M) costs of the proposed station.

- **Host Railroads** – Private freight railroads own the tracks over which intercity passenger rail services operate south of Washington, D.C. The Class I (Host) Railroads in Virginia are CSX and Norfolk Southern. The Host Railroads will typically lead any analysis related to the impact a proposed station would have to their freight network.

- **Amtrak** – Incorporated as the "National Railroad Passenger Corporation", Amtrak provides the rolling-stock for and operates the state-supported routes in Virginia through an operating Agreement with DRPT. DRPT relies exclusively on Amtrak to provide ridership analysis for state-supported services. Amtrak can also provide a program of station requirements for a proposal based on the anticipated service frequency and ridership.

- **Virginia Railway Express (VRE)** – VRE is a commuter rail service that operates in Northern Virginia over CSX (Fredericksburg Line – I-95 Corridor) and Norfolk Southern (Manassas Line – I-66 Corridor) with a northern terminus at Washington Union Station in Washington DC. VRE owns rolling-stock and stations, some of which are also served by Amtrak state-supported service.

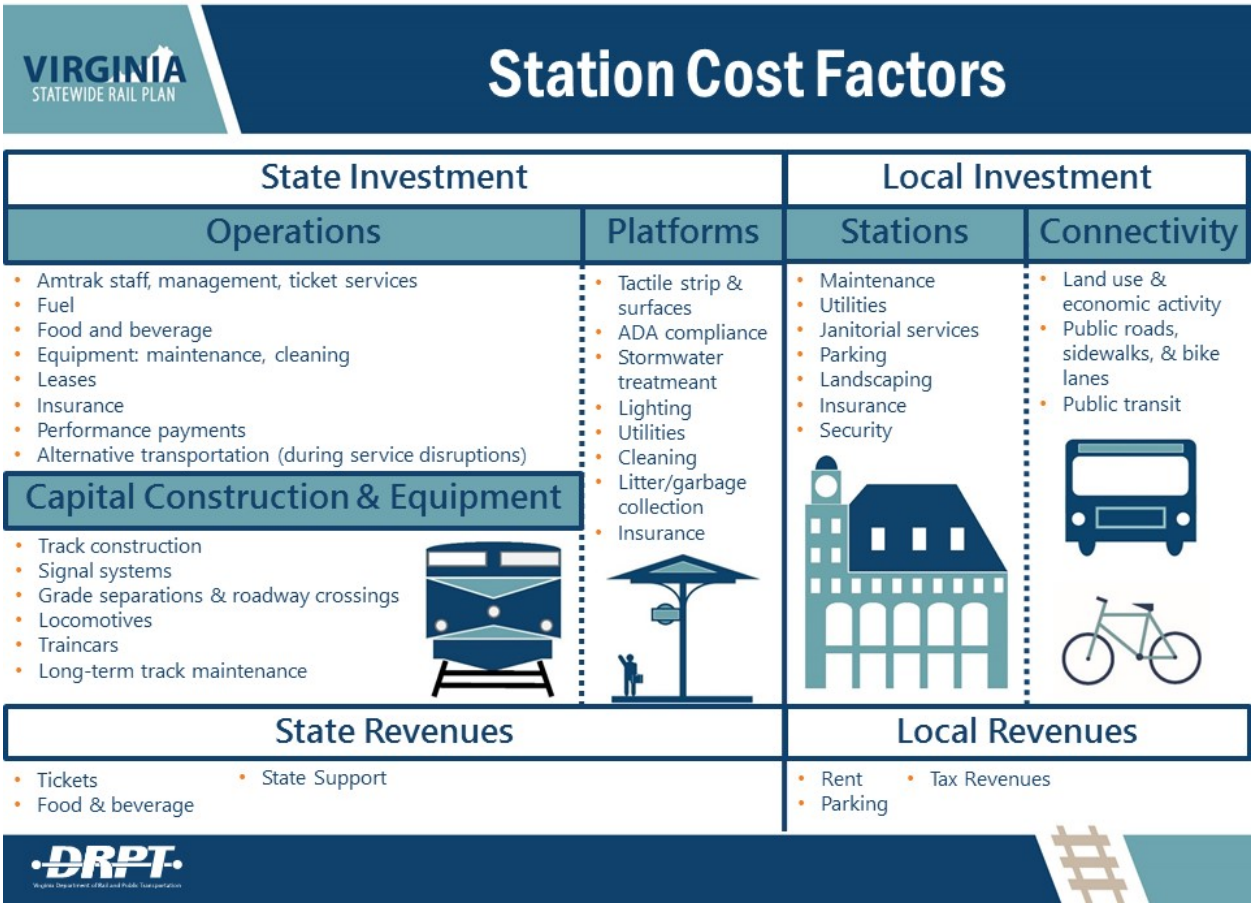
- **Federal Railroad Administration (FRA)** – The FRA regulates safety for the Host Railroads and Amtrak, and has approval authority over the design of station platforms associated with intercity passenger rail stations (Amtrak). Any station proposal must comply with FRA Americans with Disabilities Act (ADA) standards for boarding passenger trains.

- **Federal Transit Administration (FTA)** – The FTA provides funding for transit services, and has jurisdiction of ADA requirements associated with commuter rail stations (VRE). Any proposal affecting a VRE station must comply with FTA's ADA standards for boarding commuter trains.

- **Public Interest Groups –** While the Project Sponsor must be a public entity, public interest groups can play an important advocacy role and shape the overall proposal. DRPT will work with Public Interest Groups by receiving comments on proposals, or as part of the Project Sponsor team.

Station Cost Factors

The following infographic breaks down the components of a station. The funding responsibilities associated with these station components should be addressed in a station proposal. While certain costs are the responsibilities of other stakeholders, as defined below, DRPT will work with the Project Sponsor to develop an overall cost estimate before presenting a proposal to the Commonwealth Transportation Board.



Operations

The costs of operating state-supported routes are funded by ticket revenues and covered by DRPT through the IPROC Fund. Costs for the service are allocated to DRPT according to a federal methodology created under the Passenger Rail Investment and Improvement Act of 2008, known as the PRIIA Methodology.

Capital Equipment

Capital equipment costs for state-supported routes are funded by DRPT through the IPROC Fund. Costs for capital equipment are allocated through the PRIIA Methodology. Virginia shares the cost of capital equipment with the Amtrak Northeast Regional services, since Virginia's state-supported routes are extensions of the Northeast Regional trains, which operate between Washington, D.C. and cities in the Northeast.

Capital Construction

Capital construction costs related to intercity passenger rail services are determined through negotiations between DRPT and the Host Railroads. These costs typically include projects that enhance rail capacity in a corridor in order to mitigate the impacts of passenger service on the Host Railroad's system. These projects are funded through the IPROC Fund or other state and federal funds. Capital improvements to the network are proposed through a Host Railroad led analysis, and subject to negotiation with DRPT. The level of investment may vary depending on whether a station proposal is for a new station on an existing route, a modification of an existing station, or a new station where service does not yet exist. DRPT will also consider the previous ten years of capital investments in the corridor of the Station exploratory proposal, to first ensure that benefits have been fully realized.

Stations

Station Building

Funding for a station building is the responsibility of the Project Sponsor. This includes, but is not limited to, funding for design and construction, as well as covering operational costs associated with the Station Cost Factors. Project Sponsors may use public or private funds for these costs. The Station Building should be considered a community asset for multimodal connectivity and public/quasi-public space. Design of the station will require DRPT coordination with Amtrak to satisfy minimum square footage and space requirements.

Platform

Design of an intercity passenger rail station platform must be consistent with FRA standards for ADA compliance. An Exploratory Proposal should assume the platform will be built to 1,000 feet in length and 48 inches above the top of the rail for level boarding (commonly called a high-level platform). It should be noted that high-level platforms interfere with freight train operations because of the clearance required to operate freight trains. Therefore, any station Exploratory Proposal must also consider the infrastructure requirements to achieve a high-level

platform, such as construction of a siding off the Host Railroad mainline. Design and construction of a platform and associated passenger track is eligible for Intercity Passenger Rail Operating and Capital (IPROC) grant funding through DRPT. Platform costs associated with Station Cost Factors typically fall under PRIIA operating agreements between DRPT and Amtrak.

Land Use and Connectivity

While not explicitly a capital cost factor, or an operating cost factor, planning for land use and connectivity implies a commitment of resources to maximize the state and local investment in creating a multimodal station. DRPT will look to the local government to ensure appropriate land use and transportation connectivity around a proposed station (see Expectations for a Successful Station). This means accessibility to and from the station to other destinations by multiple transportation modes (i.e. transit, car, taxi, bike, walk, etc.). Land use around the station may vary in an urban or suburban location but should promote density and economic activity.

Proposal Development

There are three phases of determining viability of a proposal.

Proposal Phase

A proposal is submitted by a Project Sponsor to DRPT, unless DRPT is initiating the proposal. The parties will collaborate on the proposal. DRPT will inform stakeholders such as the Host Railroads and Amtrak in order to solicit any concerns over the initial viability of the proposal.

Adding a New Station to an Existing Route

DRPT and the Project Sponsor will work collaboratively to address the proposal as it relates to Station Cost Factors and the Factors for Consideration as defined by this policy statement.

Modifying an Existing Station on an Existing Route

DRPT and the Project Sponsor will work collaboratively to address the proposal as it relates to Station Cost Factors and the Factors for Consideration as defined by this policy statement.

Adding a New Station where service does not yet exist

Because extensions of existing service entail long-term capital and operating cost commitments, DRPT and the Project Sponsor will discuss the merits of the proposal and the current DRPT priorities which may determine whether a proposal will move beyond the Proposal Phase. Such proposals must be consistent with the Virginia State Rail Plan.

Assessment Milestone

The Assessment Phase will include two CTB Rail Committee meetings. At the first CTB-Rail Committee meeting DRPT staff will introduce the proposal to the CTB Rail Committee. At the second CTB Rail Committee meeting, the Committee will decide whether or not to recommend the proposal for presentation to the full Commonwealth Transportation Board.

Negotiation Milestone

If the CTB Rail Committee recommends the proposal for CTB presentation, DRPT will work with the Project Sponsor to prepare a cost estimate for the station proposal, which will include the full cost for the station, any infrastructure enhancements to the Host Railroad, as well as long-term operational costs. CTB approval of a proposal advances a proposal to a project. DRPT will take the lead in negotiating with Host Railroads and Amtrak on related operational impacts, service changes, capital improvements, platform requirements, ridership analysis by Amtrak, and modeling by the Host Railroad. Subsequent funding commitments to advance the project with state funds will also require approval of the CTB.

Factors for Consideration

The following questions intended to guide the Project Sponsor when preparing a proposal. This is not intended to be an exhaustive list, but addresses CTB expectations.

1. What funding is the Project Sponsor committing to the station?

   The Project Sponsor must develop a funding plan that addresses construction as well as the operation and maintenance of a station. Federal and state funds may be available for the development and construction of a station, but local funding commitments are part of the factors for consideration.

2. Is the station proposal consistent with state transportation goals of the Virginia State Rail Plan?

   The State Rail Plan has been developed to guide DRPT and the CTB in planning and funding decisions. The State Rail Plan describes the CTB's priorities for the expansion of passenger rail across the Commonwealth, and prioritizes corridors for future investment. Any station proposal should reference the Virginia State Rail Plan for passenger rail policies and priorities.

3. How does the station proposal affect the railroad network and other existing services?

   A holistic evaluation of the rail network, including existing passenger services, will be based on discussions with DRPT staff and may incorporate results of operational modeling performed by the Host Railroad. Considerations will include existing freight traffic, existing intercity passenger rail services, existing commuter services (including intercity bus), and existing needs in the corridor.

4. What is the effect of this station proposal upon other stations?

   Proximity to other stations is a consideration because a rail station is a regional transportation asset that represents significant public investment. A station proposal should quantify the population density within the ridership catchment area. It should also discuss the degree to which ridership at this station will be comprised of new riders to the corridor, as opposed to redistributing riders that utilize existing stations. In evaluating the impact to existing stations, DRPT will also review federal and state investments in the past 10 years to other stations and intercity passenger rail services in this corridor.

5. How will this station affect the total ridership for the route?

   DRPT will rely on Amtrak to perform a ridership analysis. Amtrak's ridership analysis will estimate the total new riders added to existing routes. DRPT may perform a benefit-cost analysis to evaluate the net benefit to Virginia from the net new ridership added to a route.

One consideration in the benefit-cost analysis will be capacity on the existing route to absorb the estimated number of new riders resulting from the proposed station addition. If capacity were an issue, additional planned train frequencies (consistent with the State Rail Plan) should be operational in a timely manner to accommodate new ridership from the new station.

6. What are the capacity requirements of the proposed station?

   The Great American Stations website www.greatamericanstations.com is a resource guide for developing a station proposal. DRPT can also coordinate discussions with Amtrak on capacity requirements. While Amtrak may recommend square footage requirements based on proposed service frequency and ridership, stations can be part of a multi-use building with larger community spaces. The Project Sponsor should clarify what other functions a proposed station might serve in the community.

7. What is the viability of the proposed station, given the Station Cost Factors?

   The funding plan provided by the Project Sponsor should include design, construction, and operation of a station.. DRPT will work with the Project Sponsor and stakeholders when appropriate to develop costs related to capacity improvements and Amtrak services.

   The costs for engineering and analysis necessary to obtain a Rough Order of Magnitude (ROM) estimate of a proposed station are the responsibility of the Project Sponsor. The Project Sponsor is also responsible for a funding plan which addresses O&M costs, with the expectation the locality will provide or secure funding for O&M of the station.

8. What are the current and future land use plans around the station proposal?

   A station proposal should reference the locality's current comprehensive plan, land use plan, and zoning, as well as any community plans for a proposed station. It should address any natural and historic resources potentially affected by the proposal. Any economic development impact of a station can also be part of this discussion.

9. What transportation connections are available or planned for the proposed station?

   The locality should differentiate between existing connectivity options, funded future options, and plans for connectivity that are part of this proposal.

Expectations for a Successful Station

Local and Regional Consensus

The locality where the station would be built or modified should be a strong partner and have a lead role. Regional entities such as MPOs and PDCs should support the proposal. DRPT will

look for resolutions and letters of support from neighboring localities, regional governments, public advocacy groups, and the business community.

Location

The advantage and convenience of intercity passenger rail service is travel from one city center to another, or to other centers of high population density and economic activity. The proposed location of a station should be located in significant population centers that are major nodes of economic activity for a region.

Land Use and Multimodal Connectivity

Land use around a station should support density and multimodal connectivity to final passenger destinations. A station should serve as a transportation hub for the locality or region. Connectivity via transit, car, taxi, bike, walking, etc. should be part of the proposal.

Policy Proposal Submission List

1. Introductory Narrative
2. Map identifying proposed sites for a station
3. Narrative describing how sites were selected
4. Funding plan related to Station Cost Factors identified in this policy
5. Narrative discussing Factors for Consideration
6. Letters and resolutions of support from local and regional governments
7. Letters of support from advocacy groups and the business community

COMMONWEALTH of VIRGINIA

Jennifer L. Mitchell
Director

DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION
600 EAST MAIN STREET, SUITE 2102
RICHMOND, VA 23219-2416

(804) 786-4440
FAX (804) 225-3752
Virginia Relay Center
800-828-1120 (TDD)

March 18, 2019

Mr. William Dyer
Division Chief, National Rail Planning
Office of Railroad Policy and Development
Federal Railroad Administration
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: Amendment to the Virginia State Rail Plan: Replacing locomotive and railcar equipment for Amtrak state-sponsored service

Mr. Dyer:

In January 2018, Virginia's Commonwealth Transportation Board adopted a new Virginia State Rail Plan (SRP) with a discrete list of statewide goals and objectives. The 2018 SRP includes objectives to "support 'State of Good Repair' projects," "expand transportation options between regional markets through enhancements to passenger rail service," and "leverage previous investments by supporting passenger services."

In 2011 Virginia's General Assembly created the Intercity Passenger Rail Operating and Capital (IPROC) Fund, which was specifically created to support operation and equipment payments for state-sponsored Amtrak service. Under Virginia's operating agreement with Amtrak, Virginia makes regular payments towards equipment used on four routes operating from Washington, D.C. to Richmond, Roanoke, Newport News, and Norfolk, with stops in other cities and towns across the Commonwealth. As Amtrak's equipment is refurbished and maintained beyond its useful life, equipment failures are increasingly affecting intercity service, a key element of Virginia's vision for a multimodal transportation network.

Therefore, the Virginia Department of Rail and Public Transportation (DRPT) would like to include working with Amtrak to acquire new equipment as part of the goals and objectives in the 2018 SRP. Amtrak's plans to progressively upgrade its rolling stock with modern, safe, and reliable passenger

equipment designed to meet the future needs of the traveling public will benefit the Commonwealth for decades.

Please let this letter serve as an amendment to the SRP to specifically include Amtrak's initiative to replace locomotives and Northeast Regional consists with modern, state-of-the-art equipment to improve both reliability and the passenger's experience.

If you have any questions please contact Emily Stock, Manager of Rail Planning at 804-786-1052.

Sincerely,

Jennifer Mitchell

Jennifer Mitchell

COMMONWEALTH of VIRGINIA

Jennifer L. Mitchell
Director

DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION
600 EAST MAIN STREET, SUITE 2102
RICHMOND, VA 23219-2416

(804) 786-4440
FAX (804) 225-3752
Virginia Relay Center
800-828-1120 (TDD)

November 25, 2019

Mr. William Dyer
Division Chief, National Rail Planning
Office of Railroad Policy and Development
Federal Railroad Administration
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: Amendment 2 to the Virginia State Rail Plan: Amtrak Acquisition of Replacement Trainsets

Mr. Dyer:

In January 2018, Virginia's Commonwealth Transportation Board adopted a new Virginia State Rail Plan (SRP) with a discrete list of statewide goals and objectives. The 2018 SRP includes objectives to "support 'State of Good Repair' projects," "expand transportation options between regional markets through enhancements to passenger rail service," and "leverage previous investments by supporting passenger services." These concepts were developed further in an SRP amendment letter, also known as "Amendment 1," which was accepted by the Federal Railroad Administration (FRA) on March 18, 2019, and attached to this letter. Amendment 1 documented that the Commonwealth is working with Amtrak to acquire new equipment as part of the goals and objectives in the 2018 SRP.

The Virginia Department of Rail and Public Transportation (DRPT) wishes to further amend the 2018 SRP to specify, per the NOFO for 2019 Federal-State Partnership Program State of Good Repair funds, that Virginia supports the Amtrak Acquisition of Replacement trainsets. Total Cost for this endeavor is estimated at $2.3 billion with the states' share estimated at over $1 billion. Virginia, Amtrak, and states sponsoring intercity passenger rail service are coordinating on efforts to secure federal financial support.

Please let this letter serve as Amendment 2 to the 2018 SRP to specifically support Amtrak acquisition of replacement trainsets as part of its goals and objectives. If you have any questions please contact Emily Stock, Manager of Rail Planning at 804-786-1052.

Sincerely,

Jennifer Mitchell

Enclosure: March 28, 2019 Amendment to the Virginia State Rail Plan: Replacing locomotive and railcar equipment for Amtrak state-sponsored service (Amendment 1)

COMMONWEALTH of VIRGINIA

Jennifer L. Mitchell
Director

DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION
600 EAST MAIN STREET, SUITE 2102
RICHMOND, VA 23219-2416

(804) 786-4440
FAX (804) 225-3752
Virginia Relay Center
800-828-1120 (TDD)

April 5, 2021

Ms. Jessie Fernandez-Gatti
Community Planner
Federal Railroad Administration
1200 New Jersey Ave SE
Washington, DC 20590

Re: Amendment 3 to the Virginia State Rail Plan: Include Eastern Shore Railroad Abandonment Exemption and Discontinuance of Service Exemption

Ms. Fernandez-Gatti:

In January 2018, Virginia's Commonwealth Transportation Board adopted a new Virginia State Rail Plan (SRP) with a then current list of railroad abandoments in Virginia.

In October, 2019, the Surface Transportation Board approved the Abandonment of 49.1 miles of the Eastern Shore Railroad. The Virginia Department of Rail and Public Transportation (DRPT) wishes to amend the 2018 SRP to include this abandonment in Table 2-4: Virginia Railroad Abandonments and Discontinuances.

Scope	Rail Carrier	Miles Abandoned/ Discontinued	Abandonment Dates	STB Docket Number
Approximately 49.1 miles of rail known as the Eastern Shore Railroad	Canonie Atlantic Company, LLC Cassatt Management LLC d/b/a Bay Coast Railroad Eastern Shore Railroad, Inc.	49.1	Canonie Abandonment Exemption Cassatt Management LLC d/b/a/ Bay Coast Railroad Discontinuance of Service Exemption	AB 1266 0 X (Canonie) AB 1267 0 X (Cassatt) AB 1276 0 X (Eastern Shore RR)

			Eastern Shore Railroad, Inc. Discontinuance of Service Exemption Granted October 31, 2019	

Please let this letter serve as Amendment 3 to the 2018 SRP to include the Eastern Shore Railroad Abandonment and Discontinuance of Service. If you have any questions please contact Emily Stock, Manager of Rail Planning at 804-786-1052.

Sincerely,

Jennifer L. Mitchell

Jennifer Mitchell